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## ORIGINAL ARTICLES.

### THE DISEASES OF NUTRITION IN INFANTS.<sup>1</sup>

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I HAVE been asked to make a few remarks introductory to the general subject of diseases of nutrition in infancy. There is a group of diseases which occurs so essentially in that early period of development designated empirically as infancy that it may be considered to be characteristic of that period. This group consists of four diseases, infantile atrophy, infantile scorbutus, rachitis, and osteomalacia. Of these diseases infantile atrophy and rachitis are essentially morbid processes occurring during the first two years of life. Infantile scorbutus, also, while having its counterpart in the scorbutus of a later period of development both in its pathology and its treatment, shows in its symptoms and course such a characteristic picture in the middle period of infancy that it may be considered at least as being a special form of scorbutus. While it is necessary to include osteomalacia in the diseases of nutrition of infancy, it, unlike the other three diseases, only occasionally occurs in childhood and is more a disease of adult life. It, however, at times so closely simulates rachitis in its manifestations that it should be included in the group, but it is not a disease characteristic of infancy as is the case with the others.

The etiology of this entire group is very obscure, but each member of the group has its own peculiar manifestations which separate it from the others. When classified under one head they clearly present a picture of a vice of nutrition.

This group of diseases is assuming a more and more important position among the morbid conditions belonging to the early years of life as it becomes evident that it is more far-reaching in its effects and influences to a much greater degree all the diseases of early life than was in former years thought possible. Thus, the prognosis of all those diseases which have a definitely determined etiology is markedly graver where such diseases occur in an infant who is suffering from one of these general disturbances of nutrition, and in this way especially both rachitis and infantile atrophy have come to play a great and im-

portant rôle in our study of infantile diseases in general and in their therapeutics. If we consider the high mortality of these diseases when uncomplicated and the greatly increased mortality of all diseases which are complicated by them, and if we recognize that these diseases are closely associated with improper food and hygiene, it becomes evident that the proper therapeutic management of this group of diseases is of very great importance and should demand especial study and care in the feeding during the early months and years of life. There is no doubt that if less attention were paid to the use of drugs in the various non-organic disturbances of the gastro-enteric tract in early infancy and a more enlightened method of feeding were adopted by laymen and physicians, or rather by laymen through the influence of the more intelligent and advanced students of this subject, it would be possible to eradicate this entire group from its place among the various pathological conditions of early life, and thousands of lives would easily be saved where they are now recklessly thrown away. The present conditions are explained by the strong position which theoretical ignorance holds in comparison with that practical and scientific knowledge which exists and is only waiting to be received and to be given a fair trial in order to prove its wisdom and success. The field for purely dietetic treatment is an immense one, and when it has completely supplanted the older methods one of the first results will be to remove the causes of these nutritive diseases, blot them out from our nomenclature and make their pathology a museum relic of the past.

It is, therefore, well worth the time and thought of this Medical Section of the Massachusetts Medical Society to discuss in detail the different members of this protean group of diseases. A thorough knowledge of the diagnosis and treatment of each one of them is of vast importance to us, who, while our mission is to cure, still hold as the highest object and aim of our art the study and practice of prophylaxis.

The three important members of this group of diseases, infantile atrophy, infantile scorbutus, and rachitis, will receive attention later, while the fourth, osteomalacia, can be described in a very few words.

Nothing definite is known about the etiology of osteomalacia and it is simply spoken of in connection with diseases of nutrition on account of its resemblance to rachitis. There is according to Ziegler an absorption of lime

<sup>1</sup> Read before the Massachusetts Medical Society, Boston, June 11, 1901, in introduction to the general subject of "Diseases of Nutrition in Infants."

salt, beginning first at the medullary cavity and proceeding outward. The epiphyses are not notably affected by the continuance of the absorptive process. The cortical bone becomes spongy and decalcified, and in the severest cases there may remain little but marrow and periosteum. The opinion is generally held that in osteomalacia the layer of osteoid tissue results from decalcification, while in rachitis a similar layer represents a new growth deficient in lime salts. The periosteum is likely to be thickened and vascular, and the medulla resembles that in infancy in its gross appearance. Spontaneous fractures and various distortions may occur in osteomalacia and the thorax is flattened laterally.

The treatment of osteomalacia is the same as that of rachitis and is essentially dietetic and hygienic. In regard to the diet, the special age and development of the individual should be considered. Care should also be taken not to force into use the functions of digestion and absorption, but to allow them to develop gradually until at the time indicated by Nature they are ready normally to assume charge of the especial elements of the food which it is their peculiar province to digest and assimilate.

#### THE MEDICINAL TREATMENT OF SUMMER DIARRHEA.

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THE acute gastro-intestinal affections among children during the heated term are of three distinct types and differ widely in their variety. They are (a) diarrhea caused by inability to digest unsuitable articles of food; (b) diarrhea resulting from bacterial action in tainted milk; (c) cholera infantum, an intense, fortunately rare, and often fatal type, probably also due to milk infection.

The first class, the digestive diarrheas, if treated early by prompt evacuation of the offending substances and rational feeding tends naturally to recovery. Although milk is not here the source of the trouble, unless the history of the case points conclusively to some other substance as the offender, it is safest as a general rule to withdraw milk for a time. Success in the treatment of the second class, that of milk infection, depends in a large measure upon the promptness with which milk in all its forms is stopped and rigidly excluded from the patient's diet and the promptitude with which any vestiges of its residue are evacuated from the intestines. Those who now recognize this fundamental principle and act upon it rarely lose their patients from summer diarrhea. The argument is a simple one. If bacteria capable of multiplying and producing danger-

ous toxins are introduced into the body in milk, the latter should be cleared out and no more introduced until the bacterial brood has been exterminated and the system allowed to recover itself. Could all these cases be seen early and so protected, the subject of treatment could be covered in a few words, but this unfortunately is not always possible.

Speaking broadly, milk including breast milk, should be stopped in all cases of summer diarrhea in children under two years of age which begin with vomiting or temperature, for during this period of infancy milk constitutes the basis of their usual food and is most liable to be the source of disturbance. In its place we may give dextrinized barley-water,<sup>1</sup> rice-water, egg-albumin water<sup>2</sup>, mutton-broth, beef-juice and a sufficiency of plain boiled water, if there be thirst. One of the first three of these may be offered at the usual hours of feeding, not oftener than every two or three hours, and, unless there be vomiting, in about the quantity previously taken at a meal. In case of vomiting the stomach should be allowed to rest as far as possible for twelve hours.

The truly medicinal treatment should be begun by a thorough action on the intestinal tract to remove decomposing and fermenting materials and all milk residue. So important is this that, even if the bowels have been acted upon by the usual remedies, they should be repeated if any milk has been given since the laxative was administered. Castor oil and calomel in divided doses are useful and have their own individual advantages. Castor oil hurries through the bowel the residue of undigested food and in its passage exerts a soothing influence upon the intestinal mucosa. It is especially valuable when there is much mucus in the stools. Nausea and vomiting, so often a concomitant in these cases at the outset, may, however, almost preclude its use. In such cases calomel in divided doses, gr.  $\frac{1}{10}$  to gr.  $\frac{1}{6}$ , every half hour or hour till one grain or possibly more has been taken, acts distinctly as a stomachic sedative as well as an efficient laxative. Furthermore, calomel acts as a local disinfectant in the bowel and, by stimulating the hepatic secretion, brings out the aid of this most important agent in digestion and absorption. Given in these small doses it is rarely, if ever, necessary to follow it with salines, a custom which grew out of the fear of producing salivation after the administration of massive doses.

In many cases, when the patient is first seen, the process has already existed for some time and marked pyrexia with more or less prostration is present. It is not the diarrhea or the pyrexia which kills; it is the intestinal toxemia. At such a time it is wisest to lose no time by waiting for the action of laxatives given by the

<sup>1</sup>Barley flour, two tablespoonfuls water, one quart; cook fifteen minutes; when cool enough to be tasted add one teaspoonful Cereol, strain, salt and place on ice.

<sup>2</sup>Stir white of one egg into one pint boiled water (cooled), strain, salt and place on ice. May add brandy, one dram.

mouth although these should be administered in every case, but one should at once proceed to remove the source of the toxemia by irrigation of the bowel. Promptly performed this is often a life-saving measure. A large douche-bag or can is filled with saline solution (common salt, 3i to the pint) and a firm all-rubber catheter not smaller but preferably somewhat larger than an ordinary lead pencil is attached. An elevation of three feet is sufficient. The choice of temperature depends upon the degree of pyrexia. If high and the patient is not in collapse the water may be cool and will directly aid in reducing the fever. Otherwise it should be lukewarm. Allowing the fluid to flow while the oiled catheter is introduced distends the tube and also the bowel in advance of the tube, facilitating its introduction without doubling. To be effective the catheter should extend above the relatively long sigmoid flexure into the descending colon. At least four quarts should be used for the irrigation. The excess of fluid will escape in gushes beside the tube. This procedure far from being a severe one is soothing to the child and is often followed by restful sleep. It may be repeated once or twice a day. If there be blood in the stools we may add a teaspoonful of tannic acid to each quart of saline solution. Every practitioner who deals with children in summer should carry a suitable catheter with him to avoid delays. Vomiting which does not cease spontaneously calls for washing out of the stomach with plain boiled water to which, if there be much acidity, bicarbonate of soda may be added in the proportion of a teaspoonful to the quart. If the toxemia be properly controlled by the above measures bismuth subnitrate is the most satisfactory drug for internal use. It should be given in not less than 10-grain doses every hour or two hours. Its efficiency is often enhanced by adding to each dose one grain of salicylate of bismuth which increases the disinfectant power. The late J. Lewis Smith invariably used some one of the varied preparations of the digestive glands in prescribing for this class of cases. The accompanying impairment of stomachic digestion which tends to allow the passage of partially digested food through the pylorus into the intestine renders this suggestion a most rational one, worthy of general adoption.

Increased peristalsis resulting in frequent evacuations is a symptom which should be considered and treated entirely by itself. When it is advisable to check it opium best serves our purpose. It should always be given separately and not combined in mixtures, for if so combined it cannot readily be stopped or reduced in dose without affecting the other medication. Marked pyrexia contra-indicates its use and it should not be given until the bowels have been thoroughly cleared. It has been said that it would be as sensible to seal up a discharging abscess and congratulate

ourselves on its cure as to lock up in the bowels the toxic products which nature is striving to throw off. Purgative, in 10 to 15-drop doses, owes some of its efficiency to the camphor which it contains. Dover's powder, in  $\frac{1}{4}$  to  $\frac{1}{2}$ -grain doses, is a favorite probably because of the complementary assistance given by the ipecac to the regulation of intestinal secretion.

In the severer type of cases in which the stools are frequent, profuse and watery, where the patient is threatened with collapse and gastric absorption in abeyance or prevented by repeated vomiting, the hypodermic use of morphine sulphate,  $\frac{1}{100}$  grain for a child one year of age, not only acts upon the peristalsis, but steadies and strengthens the pulse. This dose may be repeated if necessary after one hour. With this should be given atropine sulphate,  $\frac{1}{800}$  grain, which also meets important physiological indications. Where the loss of fluid is very great and cannot be made up by ingestion, high saline enemata should be given, or, if not retained, saline hypodermoclysis should be boldly performed. (Salt, 3i, to water, Oj, boiled and strained.) Persistent high temperature, with nervous symptoms, calls for repeated cool sponging or bathing and the use of the ice-cap. Collapse must be met with mustard baths or packs, hot bottles and hypodermatic stimulation.

A tendency to rather frequent stools may persist after the acute symptoms have been overcome and the child is being cautiously led back to a simple dietary. For these Dover's powder is very satisfactory and tannalbin often useful, but even better at times is the following mixture.

R	Pepsinæ .....	gr. j
	Acid hydrochlor. dil.....	℥ jii
	Glycerini .....	℥ jiii
	Aquæ menthæ pip.....	3ss
	Aquæ .....	3j

Sig. In water four times a day after food.

Stimulants are often required during the acute stages. Brandy in 10 to 30-minim doses may be employed well diluted or added to one of the substitute foods. Preparations like liquid peptonoids which combine both nutritious and stimulating properties are most useful in 1-dram doses given with the food at each feeding, and children who receive them bear, with less loss of weight, the simple forms of fluid nourishment which must be continued for forty-eight to seventy-two hours until the acute symptoms have subsided.

In breast-fed infants nursing may usually be resumed at the end of twenty-four hours, the breast being given for half the usual length of time at every second feeding and alternating with the previous bland fluid food. The moment when one may cautiously return to a cow's milk diet must necessarily be determined by the indications in the individual cases. It is safe to say that under the stimulus of parental anxiety this return is often made



too early and too rapidly. When the appearance of the stools, allowing somewhat for the difference in the food ingested, has improved in color and consistency, and the symptoms and general appearance of the child indicate a return of more normal conditions, cow's milk may be cautiously added to one of the previous foods.

At first it is wisest not to exceed a proportion of a dram to the ounce (1-8), and often with young infants still less. As this is shown by the stools to be digested, a further increase may be made from time to time until after the lapse of several days the child's food approximates its usual proportions. It is most important not to overtax the impaired digestion and to this end we may best allow the child's appetite to remain a little in advance of the strength of the food supplied. Recovery from a sharp attack of summer diarrhea is a slow matter and extreme care should be exercised for ten days or two weeks at least. Some children, moreover, do not again recover their former digestive powers until the advent of cool autumnal weather, and must be most carefully guarded in their diet lest they develop other acute attacks which may lead to an ileocolitis or a condition of chronic intestinal indigestion.

47 West 56th Street.

#### THE HYGIENIC TREATMENT OF SUMMER DIARRHEA OF INFANTS.

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THE frequent occurrence of summer diarrhea among young children in New York and other large and crowded cities and the high mortality-rate resulting from it are appreciated by a study of the vital statistics of the Board of Health. The reports of country districts show no such increase in the death-rate in spite of similar climatic and barometric conditions. One can readily see from these reports that the child should, if possible, spend the heated term in the rural districts. This is, of course, in the majority of cases out of the question, and I will here suggest some of the hygienic measures which will render the child less liable to contract the destructive disease, or, if acquired, will at least render an attack less severe.

Summer diarrhea has been proved to be of bacterial origin, and it is through the agency of these bacteria and their products, toxins, the growth of which is favored by improper food supply, impure air, and insanitary environments, that so many little ones succumb to it. But, first we must appreciate the fact that many children are rendered susceptible to an acute attack of enteritis by a pre-existing con-

dition of indigestion or of intestinal catarrh. The stools should be examined, and, if necessary, the food modified as indicated. The child should not be given an excessive proportion of fats or proteids, nor should it be fed too often or too abundantly. This latter condition commonly occurs through the anxiety of the mother that the child should thrive. The first indication of rachitis should be noted. In other words, as warm weather approaches, special care should be given to the feeding of the child; thus we may avoid predisposing causes, and should the child be attacked by the disease, the prognosis will naturally be better.

In regard to the food supply, if the child is nursing, and digestion is impaired, the mother's health may demand attention. If the child is bottle-fed, the milk supply should be of the best quality possible. The control and regulation of the sale of milk by the Board of Health has saved many thousands of infants' lives, by giving a fresher and a better milk. Nevertheless, the distant source of the milk supply and the resulting delay in forwarding it necessitate an elapse of from twelve to twenty-four hours before the consumers receive it. With milk at this age, the danger of lactic acid, the multiplication of bacteria, and other fermentative changes may be considerably lessened if the mothers are shown—I mean shown by actual demonstration—how to sterilize it and how to keep it sterile.

The purchase of bottled milk rather than of milk kept in bulk in grocery stores is most desirable, and I never fail to insist upon this among the poorer families, where it is the rule rather than the exception to patronize the corner grocery. We must show that the food for artificially-fed babies should be prepared with the closest attention to directions; that the bottles and nipples, and all utensils used in preparing the food, should be selected with care and kept scrupulously clean. The only nipple that should be used is one that fits over the neck of the bottle—no connecting rubber tubing is permissible. After use the nipple and bottle should be put into water to soak, and then boiled in a solution of bicarbonate of soda. An ample supply of both bottles and nipples should be kept on hand, to allow sufficient time for this process.

The food should be given at regular intervals. It is well for the child to be allowed to drink frequently of cool water that has been boiled. Often a child cries when it is thirsty, and the mother believing it to be hungry gives it food and thus overfeeds it. If the child does not vomit the surplus food, it may collect in the intestines, cause irritation, and produce the diarrhea.

The potency of unhygienic conditions as a joint factor in producing this summer diarrhea, is also entitled to our careful consideration



in the treatment of each patient. Many suggestions can be made as to the sanitary environments, which will contribute to the welfare of the child. The room should be selected so that at some period during the day, it is exposed to the beneficent effects of the sun, and we must see that it is kept perfectly clean and well aired, and its furnishings as well.

Only those who are in attendance on the child should be permitted to remain in the room. Often in visiting among the poorer classes, we will find the sick room filled with neighbors and friends, and it will be close and foul smelling from the overcrowding. Absolute quiet is essential. We know how often a loud or startling noise will cause a convulsion in a weakened child.

All garbage and refuse should be immediately disposed of, and it should not be allowed to collect in heaps out-of-doors, where it so readily decomposes in hot weather. The effluvia from this alone not infrequently causes diarrhea in young children. Should we notice noxious odors for which we can not account, we should have the plumbing inspected and active search instituted.

The little patient should be placed on a comfortable mattress—not, as so often seen, on a hot pillow in its carriage. The clothing should consist only of a light, *white*, loosely woven, woolen shirt, a loose, light robe, and diaper. Socks are not advisable. The lower extremities and feet, in severe cases, may demand artificial heat. The napkins must be immediately changed when soiled, and washed, boiled, and thoroughly dried before used again. All superfluous clothing must be removed from the vicinity of the child. The sheets and bed coverings should be changed and aired frequently.

I believe that the use of water internally and externally is far too often neglected. A bath by tub or sponge, with use of a good soap, given daily, is essential not for cleanliness alone, but to aid diaphoresis. Bathing, by sponge, at intervals during the day refreshes the child and may supply to a slight degree the great loss of water caused by the evacuations.

The facilities that New York and some other cities offer for various long and short trips upon the water afford great assistance to the physician in his treatment. Many cases that have seemed desperate have recovered by removal from the city by water. The daily excursions of St. John's Guild have saved and prolonged many lives. The recreation piers recently built by the city offer advantages that are not to be neglected. We should also utilize the many parks, where the child may be carried for a portion of the day, and given a substitute, though perhaps a poor one, for the country.

66 West 56th Street.

#### AFTER TREATMENT OF SUMMER DIARRHEA OF INFANTS AND CHILDREN.

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It is difficult to lay down any fixed rule by which we may be guided in the return to a more ample diet after the acute symptoms of an attack of summer diarrhea have subsided. It is best to be guided by the desire for food, the condition of the intestinal tract, as shown by the number and character of the stools, disappearance of abdominal tenderness and tympanites. The character should be ascertained by the personal attention given by the physician to the passages, for one can never gain an accurate idea of the true condition without investigating as to the color, consistency, the presence of mucus, curds and undigested particles of food. It is absolutely necessary that we ascertain whether the derangement be an enteritis or colitis, for in the former condition as evidenced by the thin, watery, yellow or greenish passages, we must withhold food; but in the latter, as shown by more consistent and mucosanguineous stools, we may give an easily digested diet, carefully avoiding an excess of sugars and fats, thus preventing sour acid stools which aggravate this condition.

A patient can not be safely considered and treated as convalescent from summer diarrhea until there has been an improvement in the character and number of stools and a disappearance of the abdominal tenderness, tympanites and fever. With the subsidence of these symptoms comes a brighter facial expression and a desire for food is shown. But we can not be guided entirely by the absence of these acute symptoms. Not until this condition has continued for several days or a week, with the patient on a light diet, showing that the alimentary tract has resumed its working capacity may we venture on a radical increase in the diet. Violations of this precaution we often see illustrated in cases suffering from relapses, due to a too early feeding which may not have been contra-indicated as much by the immediate symptoms present as by the fact that the system was just reacting from the wear and tear of the recent disturbance and was yet unable to undertake the full performance of its digestive and assimilative functions. The question of properly deferring a return to normal diet often taxes the ingenuity and patience of the physician.

The after-treatment of this condition is essentially hygienic and dietetic. Even after all immediate symptoms have subsided it becomes a serious question as to what food shall be used. Of the various kinds of prepared foods, I think the most satisfactory is the pure modified cow's milk, using as a diluent, barley-water previously dextrinized by a diastase or

maltine. By beginning with a percentage milk, a food that will agree with the child is almost invariably attainable. The tendency is to begin with too high a percentage, for it is noticeable in changing the diet of any child that its digestion will be disturbed at the first feedings by an amount which will later be taken without the slightest ill effects. A good plan is as follows: Decide upon the number of feedings, amount of milk, sugar, cream and diluent to be taken by the child. As, for example, we would take three ounces of whole milk, one dram each of sugar and cream and three ounces of barley-gruel. Seven feedings of this amount and proportion may be given in twenty-four hours. To prepare the barley-gruel, add two full tablespoonfuls of barley-flour to one quart of water and boil for fifteen or twenty minutes; to this is then added two teaspoonfuls of Cereo, or dextrinize the barley-water with any other reliable preparation on the market. The diastase partially digests the starch of the barley-water causing it to form with the milk a much looser and softer coagulum. This is shown by actual experiment in the laboratory and also in the curdled vomitus of children taking milk thus modified, the curds being softer and less tenacious than the firm, rosy curds which are almost invariably present when such diluents are used without diastase. Wheat or oatmeal flour may be used instead of the barley flour in making the gruel, though from my experience I favor the latter. This is a simple method of preparation and one in which the proportions may be easily modified. Any mother may be instructed in its preparation so that there will be little chance for error.

If the above treatment fails, kumyss in my estimation stands next. The dislike for kumyss manifested by some is usually overcome after the first few feedings, though it is sometimes more readily taken if one part of water be added to four parts of kumyss. I have seen patients with whom it seemed that all else had failed, begin to improve immediately when put on this. It is especially well taken during the summer months, having a cool, pleasant taste and a fondness for it is soon developed. Beef-juice given three times daily is a most valuable aid in the condition under consideration, seldom, if ever, causing intestinal disturbance and being easily assimilated. This should be expressed from fresh, lean beef daily, thus having it perfectly sweet and fresh. A good method for giving it is one dram to an ounce of barley-water.

In the dietetic treatment during this stage, milk of course, should form the principal factor, but children of two or three years of age will not always submit to a milk diet, nor is it best to keep them on it. They may have in addition beef, mutton, or chicken-broth from which the fat has been carefully removed. Finely chopped or scraped rare roast beef is

also a valuable addition. However, we should not rely on these broths to take the place of milk for any length of time, since upon them alone the child invariably loses ground, but they are unquestionably of value in supplementing the milk diet. Dry toast or zweibach seems the safest and best form of farinaceous food to begin with in children who are accustomed to a mixed diet, but at first a liquid diastase should be administered to aid the digestion of starch. Some form of pepsin, as the wine or cordial, is of undoubted service in the management of these cases when a mixed diet is begun.

The general condition may be favorably influenced by inunctions of cod-liver oil and they are especially indicated in children whose circulation seems sluggish, with blue skin, cold feet and hands. A most marked improvement is often seen in a short time from this treatment. The cod-liver oil should be warmed and rubbed in by the hand from the head to the feet. This should be continued for half an hour, repeated twice daily, and followed by a warm sponge bath. By the sponging the unpleasant odor is done away with and the comfort of the child enhanced. Aside from the absorption of the fats, the massage has a decidedly stimulating influence.

Cases allowed to run on without being checked early, often mark the beginning stage of serious malnutrition, anemia, chronic enteritis and mucous colitis. The tendency to constipation that sometimes occurs during convalescence is best corrected by the diet, water given freely between feedings, abdominal massage and enemata. As a rule purgatives are to be avoided unless demanded by some other condition, one dose may at times undo the good results which it has taken days or weeks to accomplish. In these cases abdominal massage should be practised five minutes twice daily; it produces surprising results, not only does it stimulate peristalsis and relieve constipation, but favorably influences nutrition. If in older children a laxative is used, fluid extract of cascara is the best and should be given daily in doses of five to eight drops gradually diminished in amount from day to day, and the best time of administration is after the last meal.

Tonics are nearly always indicated and the syrup of ferric iodide seems the best of all forms of iron tonics for children, for it produces fewer unpleasant effect than any other. It should be given in from two- to five-minim doses to a child of two years old. The tincture of nux vomica for older children is valuable in these cases of malnutrition with poor appetite and sluggish bowels, being best given after meals in two-minim doses for children of from two to three years of age.

By carefully watching for the symptoms of dentition, the nervous diarrhea so often ac-

companying it may be controlled by early lancing of the gums if swollen and painful, and by the administration of bromide of soda, about four grains every three hours for a child one year old. A cool morning sponge, the greater part of the day spent in the open air and a well-ventilated sleeping room will go far in supplementing the other treatment and in preventing relapses, so common during the summer months. Coupled with pure air comes absolute cleanliness. Careful attention should be given to excoriated buttocks and frequent sponging, change of napkins and powdering go far in preventing this annoying complication. The likelihood of producing an enteritis in one convalescent from a recent attack by sudden cooling of the body should be borne in mind in an effort to get fresh air. For the mucous colitis following this condition, daily high irrigation of the colon with normal saline solution is productive of the better results than are medicinal remedies administered with a view to local action on the colon. The exact amount of solution used is a matter of judgment, but the irrigation should be continued until all particles of mucus are removed.

#### THE CLINICAL FEATURES AND TREATMENT OF ACUTE BRONCHITIS IN CHILDREN.

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BRONCHITIS is such a common disease amongst children that its clinical features should be familiar to every one, yet in many cases it produces such mild symptoms that its presence is readily overlooked. Systematic examination of the lungs of all sick children will reveal in many instances unsuspected bronchitis of varying degrees of intensity, often sufficient in itself to account for illness erroneously diagnosed because of imperfect examination.

In a child otherwise healthy the most prominent, perhaps the only symptom noticeable will be a cough, not necessarily very severe, but due apparently to some local irritation in the throat or lungs leading to a desire to relieve the irritation or impediment by the expulsive effort of the cough. The fauces and tonsils may or may not be reddened or tinged; if true bronchitis result, as it does so often, from a direct spreading of the inflammatory process from the nasopharynx to the bronchi, then there will probably be turgescence of the fauces as well; but bronchitis may occur also as a primary disease, in which case the fauces will show no coincident irritation. This is a point of some importance as affecting another symptom, fever; for this is found to be more frequent and in greater degree in those cases in which the fauces are also involved than in cases of primary bronchitis. In the latter there may be little or no fever, and but little accel-

eration of the pulse, as long as the bronchitis affects only the larger tubes and is not very extensive in the matter of area involved. This limit, however, is soon overstepped, and most cases of bronchitis present more or less fever, in addition to the cough, with a corresponding rapidity of pulse-rate, and the fretfulness and irritability that appear in children as the constant accompaniment of fever. This is usually worse as night approaches, the child having been fairly cheerful and happy during the day, having had its morning nap, and played with but trifling discomfort afterward, will become quite fretful later in the day, will cough more frequently, and more harshly, as evening approaches, showing at the same time by its brightened color and hurried pulse that fever is present.

In mild cases the fever may reach 102° F. and the pulse rate run up to 110 or 120. The cough is usually worse early in the night, and may become so troublesome as to render sleep possible only at intervals. After midnight the cough will be less, as the child becomes worn out and sleeps heavily till early in the morning. Changes in the respiration follow deeper extension of the bronchitis which produces interference with the proper aeration of the blood, or a very general dissemination of the disease which produces the same effect: in mild cases the respiration will probably remain unchanged. Both lungs are usually affected at the same time, not necessarily in the corresponding portions of each lung; but the general principle holds that the invasion increases in severity or diminishes in each lung coincidentally. In this respect simple bronchitis differs very materially from complicated cases; for should bronchopneumonia develop, a most common and most serious complication, the various spots of more or less circumscribed consolidation occur in different parts of each lung without any apparent coincidence, and one lung may advance toward recovery while the disease is progressing unfavorably in the other. In like manner when the pleura becomes involved in the inflammatory process, as is often the case in deep-seated bronchitis, it may readily be on one side only.

Of the various complications it is not intended to speak, for this paper is to be limited to the subject in hand, which is quite sufficient. Bronchitis in children is a disease having no definite limit. It may not advance beyond the simplest invasion of the largest bronchi, producing some roughening of the respiration with a dryness of the throat and desire to cough, or it may invade the entire area of both lungs, filling them with universal râles, dry and sibilant at first, but becoming moist and bubbling at many points as the small bronchi become loaded with mucus in the later stages of the disease. In the matter of time, there is no definite division between these stages, for they will most likely occur simul-



taneously in different parts of the child's lungs as the areas of congestion or exudation advance and recede with the varying ability of the child to resist the invasion. While there is no fixed limit to it, very much can be done by proper treatment to cut short bronchitis in children at any stage of its course. In this, as in many other diseases, the child shows its remarkable power of resiliency against the depression under which it labors. Whether it is by the elaboration of an antidote to some specific infection which causes the disease; or by a power easily recognized, but described with difficulty, which enables the organism to check the onward progress of disease and rapidly repair the damages inflicted; in either case the child possesses this ability in marked degree, and is enabled to exert it by the assistance of medicines and attention to hygiene and nutrition far more readily and effectually than lies in the power of the adult. For this reason, in children who are beyond the first year of life, uncomplicated bronchitis is rarely fatal. Very young children with general bronchitis and much secretion frequently are overwhelmed by the obstruction and become smothered, as it were, from inability to unload the bronchi. Older children are better prepared for this emergency and cough up quantities of mucus to be swallowed or expectorated according to the age of the child.

The case may have a very grave appearance and may continue for a long time, but if uncomplicated the lungs are usually quite competent to oxygenate the blood, and recovery follows after lapse of more or less time. After severe or prolonged cases of bronchitis in children it is usual to find the lungs emphysematous, the percussion note highly resonant, whistling or cooing dry râles present in various parts of the lungs, the expiration much prolonged, showing a loss of the usual elasticity of the lung. This may persist for days or weeks, according to the severity of the bronchitis or the length of time occupied by the attack, but with care and attention during the child's slow convalescence, it will in time disappear.

As soon as bronchitis is diagnosticated in a child, intelligent treatment must be compelled. No case is without danger, if not of death, at least of a long illness, with a constant fear of complications that are only too likely to result fatally. Younger children have more to dread than older ones, but every case must be cured as soon as possible. In mild cases no medicines are required; regulation of diet, a mild laxative, investigation of the child's clothing both for the day and for night, so as to provide comfortable warmth of surface at each period, and confinement of the child to a sunshiny, well-ventilated apartment, with suitable and equable temperature, will insure its prompt and complete recovery.

It is well to remember, however, that one

attack of bronchitis seems to weaken the power of resistance of the child, and that exposure to ordinary conditions should be made carefully and gradually. More extensive or deeper invasion requires much more attention. In addition to the restrictions mentioned above, medicines are required. It is best that the child should be put to bed, as many unavoidable exposures to open doors or windows are thus avoided, and the rest and warmth of the bed are in themselves excellent curative measures. Babies take medicines with difficulty and are best treated by local applications and inhalations. The oiled silk jacket, more or less wadded, and made to fit close to the chest, held in position by being pinned to the napkin, or by tapes passing between the thighs, is of valuable service. Beneath this stimulating liniments, containing turpentine in the required strength, or weak mustard plasters, may be used to produce irritation of the surface, never strong enough to blister the skin. For each application the jacket is opened at the back and is replaced immediately.

Many stimulating inhalations have been proposed to promote free transudation into the bronchi, but none are satisfactory in every case. Frequent inhalation of steam often produces fluidity of the tough bronchial mucus and its ready dislodgment by coughing. This is easily administered by covering the crib with a canopy made of a sheet beneath which the kettle is boiled. The vapor of benzoin has appeared at times to be beneficial, but inhalants are of such varying effect that the long list recommended must be tried to find the one most suited to individual cases. Whatever medicine is given to infants must be easily taken and not apt to destroy the desire of the child for food. Personally, I use very few drugs in such cases, the syr. hypophos. co. in doses suitable to the age of the child being the only expectorant that I try and experience has taught me that it is beneficial. If, in spite of these remedies, the bronchi of the infant are becoming more and more oppressed with mucus, an emetic may be used, tr. ipecac, in dose sufficient to produce emesis, being the best. This is not to be given unless it is actually required, for the practice of making a child vomit every time that it has a severe spell of coughing cannot be condemned too harshly; it is necessary in these severe cases to save the baby's strength in every way, not to deplete and overtax it on slight provocation. Stimulants will be required in proportion to the fever and the manifestly weakened action of the heart; the pulse will be the best guide in this. It has been my custom to use alcohol in all of these cases and I have never seen any harm result; on the contrary, it appears to have a sustaining effect upon the heart that is most desirable, and from it can be obtained all that can be had in this direction. I have never seen any additional benefit in in-

fants from strychnine or other powerful tonics, which could not be obtained from alcohol. It is important to watch the effect of the stimulant, which is given for a specific purpose and should not be given in excess of the quantity required to do what is needed. If cyanosis is developing and the baby becomes more and more obtunded by the deficiently oxygenated blood, it should be frequently changed in position, lying on one side for a short while, then on the other; a wakeful, crying baby is to be preferred to one that becomes lethargic. Indeed, we have good authority for keeping the baby awake by severe measures, such as spanking it, or by successive applications of hot and cold douches to its chest. It is well to remember that a baby possesses latent powers of recuperation that justify, at times, treatment that would appear in an adult to be unnecessarily severe.

The same rules hold good for older children in severe cases. When the fever runs high and respiration is much impeded, confinement to bed and free alcoholic stimulation are called for; the wadded jacket of oiled silk is a great assistance. If there should be also much pain from pleuritic involvement, I am old-fashioned enough to believe that a large flaxseed-meal poultice will give more relief than any other external remedy; this is the result of observation of many cases. Inhalations are quite soothing, or, if desired, can be made to loosen the thick mucus and promote expectoration. Older children take cough syrups better than babies, and are less likely to have their stomachs disordered thereby; such mixtures should contain muriate of ammonia in proportion to the age of the child. Judgment must be used in giving hypnotics; bromide of soda will sometimes suffice to give rest to the excited nervous system, but oftener codeine or heroin will be required. In very severe cases it calls for nice discrimination to decide whether or not the child should be made to sleep, whether danger is most to be apprehended from a fatigued and overtaxed nervous system, or from deficient aeration of the blood. In such cases the inhalation of small quantities of oxygen has proven of value. In prolonged cases, when the heart action is very rapid and the organ becomes fatigued, strychnine, given, by hypodermatic injection, is of great service. The tougher muscle of the youth will respond to such treatment long after the more delicate fibers of the baby would have passed the point of final exhaustion. In every case the disease should be completely cured before the child is allowed full liberty, as imprudence is very likely to start again the process and the bronchitis may so continue for weeks or months. It is not necessary to confine the child strictly to its bed, but in cold weather it should remain indoors until the bronchial catarrh has entirely disappeared. This complete cure can be hastened by judicious feeding, the use of stimu-

lating frictions of the chest, and by the exhibition of cod-liver oil and of small doses of iron and arsenic, if the child is anemic.

### EMPHYEMA.<sup>1</sup>

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THE memory of the unsatisfactory outcome of many of the cases of empyema coming under my observation while a hospital interne led me during the past winter to study this subject as it was found in the records of the Presbyterian Hospital of this city, with the view of learning any practical points concerning its occurrence and management.

The condition is one which we, as younger practitioners may be called on frequently to treat and I have therefore thought its consideration may prove of interest and profit. The material at my disposal includes the histories of fifty-two cases, the total number found in the wards of the Hospital named during the eight years ending last July. A recital of the histories in detail could only be a tiresome proceeding and will be omitted from this paper that your attention may be called only to the conclusions drawn.

You will agree with me in asserting that the outcome of many cases of empyema not proving immediately fatal is very unsatisfactory if the picture, so often seen in hospital wards of patients presenting a pus-discharging sinus for weeks and even months after the operation, is called to mind. That such a picture is not seen in every case, nor in the majority of cases, gives the right to hope that a thorough understanding of the disease may confine it to a much smaller minority. With this idea in mind I studied the cases from the following standpoints and endeavored to draw practical conclusions therefrom: Sex, age, family and previous personal history, exciting cause, side and extent of pleura involved, character and quantity of pus with contained bacteria, the treatment instituted, including character of operation, irrigation of cavity immediate and later, the form of drainage, and mortality.

The influence of sex was found to be an etiological factor in the proportion of 38 males to 14 females, a ratio practically the same as in pneumonia which is recognized as the most frequent antecedent of empyema.

In the matter of age there is found a more practical important influence. One-fifth of the cases were in children under five years of age and more than half occurred before the twentieth year. This fact impresses the importance of ever keeping in mind the possibility of an empyema being present in any chest lesion in children and young adults. This importance will be more fully recognized when later we consider the marked advantage of an early diagnosis in just these cases.

<sup>1</sup>Read before the Quizz Society, New York, 1901.

In seven cases a tuberculous family history was present and in five others such a history was doubtful. The influence of this was manifest in only two cases, one patient dying and the other remaining unhealed. The effect of a tuberculous personal history could not be studied, because of the fact that phthisical cases are not admitted to the hospital. Pneumonia was present as the exciting cause in 26 cases and in 3 others it was a probable factor. In 10 cases a simple pleurisy became purulent; in one case sarcoma and in one trauma acted as exciting causes and in one—double sacculated—the infection seemed to be derived from a general sepsis due to pyosalpinx. In 43 cases the whole pleura was involved and in 9 cases the empyema was sacculated. In one case it was general on the left side and sacculated on the right and in one case a double sacculated empyema was present. The latter was interesting in that it resulted in a cure after aspiration and rupture into the bronchi, through which good drainage took place. The constitutional symptoms were as severe in the sacculated cases as in the general, except when the former were very limited in extent.

In 27 cases the right side was affected, in 22 the left, in 2 both sides, and in one the side was not stated. No influence in the course of the disease attaches to the side involved. Especial interest attaches to the study of the cases from the standpoint of the bacteriologist, for it is from him that we may hope for increased accuracy in a differential diagnosis of the varying types of the disease. The time may come when such a diagnosis will so help us that we can effect a cure in certain cases by aspiration or simple incision without rib resection, reserving the latter for fewer cases than at present we dare attempt.

A bacteriological examination was reported in 24 cases in the following proportions: In 12 the pneumococcus was found, in 8 the streptococcus, in 4 both of these, in 2 the staphylococcus, in 1 the tubercle bacillus, in 1 an undetermined coccus, and in 4 no bacteria were found. In 4 cases where pneumonia was the exciting cause no pneumococci were found. Three of these were of long standing when the bacteriological examination was made, one having a phthisis. The fourth, the only case of the kind, was acute after pneumonia. All of the 4 cases in which the pneumococcus and the streptococcus were found associated had a pneumonia as the exciting cause. The pneumococcus was the cause of the most virulent cases, the infection being even more marked than with the streptococcus and the course being more prolonged if a fatal termination did not intervene.

Death occurred in 7 cases in which a bacteriological examination was made and in 5 of these the pneumococcus was found. In one of the remaining 2 sarcoma of the chest-wall was the cause of the empyema and of death

and in the other a general pyemia, with empyema only as an incident, caused death. The character of the pus evacuated gave no indication of the contained bacteria except the thin yellowish pus due to tubercle bacilli. A thick, fetid pus often gave no growth on culture media and showed no germ life under the microscope while a "sweet laudable" pus contained pneumococci and streptococci.

With this brief summary of the etiology, general nature and bacteriology of the disease, I will pass on to the more practical question of its management and a consideration of the causes of our failures. Of these a more detailed study will be found interesting: (1) When shall we operate in empyema? (2) Should an anesthetic be used? (3) How shall we operate? (4) What shall be the after-treatment? and (5) why do cases of empyema die?

The answer to the first query, when to operate, admits of but one answer and that is immediately on making the diagnosis of pus in the pleural cavity. Occasionally a case may present itself where an empyema has developed very rapidly consequent to a pneumonia and the latter has so debilitated the patient that the radical operation would be inadvisable at once, a simple aspiration being first performed. But such cases are rare and the records here considered showed that, other things being equal, the earlier an operation was done the more successful was the outcome of the case. The practical bearing of this is summed up in the injunction to make an early diagnosis. If a pneumonia does not terminate according to rule, the possibility of pus being present should be borne in mind.

The choice of an anesthetic seemed to lie with the individual preference of the operator and this preference was for chloroform in 31 cases as against ether in 13, and cocaine in 3, 5 being done without anesthesia. In the administration of the anesthetic, care was taken never to produce profound narcosis, with the idea that the empyema might rupture into a bronchus and, if the laryngeal reflex were abolished, pus might be drawn into the sound lung. There is no mention in the records of any accident occurring from anesthesia nor from the actual operative procedure.

How shall we operate? The answer to this question is given in a decided manner by a careful study of the fifty-two records. It is that the satisfactory termination of an empyema was in direct ratio to the thoroughness of the drainage established—and thorough drainage implies an arrangement by which pus is not allowed to remain pent up in the abscess cavity for even an hour after its formation. In some cases, those of children notably so, this was accomplished by simple incision. In others the resection of pieces of one of two ribs failed to provide it. In general, however, it may be said that in those cases



which were slow to heal and which produced long-continued sepsis, the opening was smaller than in the more favorable cases.

In 15 cases intercostal incision alone was done without resection, with the following results: Deaths, 6; recurrences, 4; cures, 5. Of the 5 cures 2 were in children under five years of age and 2 in patients each with a small sacculated empyema, leaving only one adult general empyema cured by simple incision against 6 ending fatally and 4 recovering. These figures may possibly exaggerate the inadequacy of simple incision, but they are so emphatic that the surgeon must give them serious consideration before deciding on the lesser operation. The fear of risking the greater operation seemed to decide the operator in many of the cases for simple incision. But the histories throughout record practically no shock as attending the rib resection—except in one case of Estlander's operation—and in many cases where the ribs were resected the patients were in a desperate condition prior to the operation.

The following rules seem good ones: In an adult remove two inches of two ribs. In a child remove two inches of one rib or one inch of two ribs, in all cases of general empyema. No distinction should be made between the very recent and the more chronic cases in the amount of rib removed, the former often being as intractable as the latter. The resection should be done subperiosteally. This method prevents hemorrhage and is rather easy of accomplishment than otherwise.

The position of the opening made is an important point. In the cases here studied the operator often made it much higher than was wise, as was afterward demonstrated by the depth of the abscess cavity below the opening as seen from the inside. In one case the peritoneum was opened, the sixth rib in the posterior axillary line being resected. This is a very unusual accident in this position and in this case no harm resulted. In 13 cases the eighth rib was resected, usually in the posterior axillary line, without mishap and in one case the ninth, with successful result. In general a rib below the seventh may be selected with safety. An exploratory needle puncture should be made prior to operation as low as the cavity is believed to extend and, if pus is found, open the pleura at that point. If not found, explore in the space above and so on till the proper point is reached. The repeated punctures are harmless if antiseptically done. The possibility of wounding an abdominal viscus should be borne in mind. The posterior axillary line proves in general the most satisfactory position for the resection.

Having removed the rib and evacuated the pus from the pleural cavity, the next question to confront the surgeon is as to the advisability of washing out the cavity. In only five of the cases here considered was such irrigation employed. The irrigation fluid being Thiersch's

solution three times, normal salt solution once, and bichloride solution (1-1,000) once. This number is so limited that no conclusions can be drawn as to the efficiency of the procedure. Certainly there was no untoward result, the precaution being taken to allow the patient to partially recover from anesthesia before irrigating. This is advisable as a number of cases of alarming heart failure have been reported where such precaution was neglected, a danger particularly liable when the left side is involved. If such irrigating is a safe part of the operation there seems no reason to neglect doing it, for on rational grounds it is well to get all the pus possible out of the cavity and to get the pleura as free as possible from infection.

The choice of drain material lies almost entirely in the use of a soft perforated rubber tube, double or single. This answers all the indications and is clean. In cases which refuse to heal as well as seems desirable the substitution of gauze for the tube gives a beneficial result, the irritation by the gauze—plain or iodoform—aiding granulation.

In 22 of the cases irrigation of the abscess cavity was performed sometime in the after-treatment. In a few cases this was done regularly and continuously; in others, only at irregular intervals. The solution used was as a rule normal salt solution, Thiersch's solution, or boric-acid solution. In one or two cases very weak bichloride solution was used and in one week creolin solution.

Although the records are incomplete as to the benefit derived from such irrigations, the repeated study of the histories seem to show that it did good. In no case did it do harm or produce unpleasant symptoms except in that of a phthisical patient where an opening was forced through the pleura into the lung while the cavity was being irrigated and the fluid was expectorated. On rational grounds there seems no reason why such irrigation should not be used when we consider the existence of a large pus-producing cavity which at best is imperfectly drained and is causing in most cases constitutional poisoning. But the fact that it was only used in less than half of the cases here considered, which were treated by a number of different men, shows a general tendency against the treatment. This seems to be due to a fear on the part of the surgeons that such irrigation will produce local and perhaps general damage. These fears are not well founded. If a poisonous antiseptic is used there is not the slightest danger of general poisoning, provided the caution is taken to see that all the fluid that is put in is returned. This can be surely accomplished by a second washing out with non-poisonous solutions. The local damage can not be serious when we consider that the peritoneum may be safely sponged off with a 1-2,000 bichloride solution. Surely a thickened pleura covered with fibrinous exudate is a less delicate membrane than the peritoneum.

In any case of empyema where the discharge is large and the drainage not absolutely perfect and general sepsis is present, irrigation with a bichloride solution, 1-5,000, or carbolic acid, 1-100, is not only a safe procedure, but is one absolutely indicated and sure to result in nothing but good.

Why do cases of empyema die? Of the 52 cases here studied 12 died. Five of these died from causes other than the empyema itself, as sarcoma, general pyemia and tuberculosis. This leaves 47 cases with 7 deaths attributable directly to the empyema, a mortality of 15 per cent. Of these only 2 occurred where prompt treatment was used, the duration of one being four days and of the other five days. The remaining 5 deaths were in patients of very low vitality prior to the empyema or in those in whom the disease was neglected. From these figures it seems that with patients of fair physique, prompt surgical interference ought to bring the mortality of empyema well under 10 per cent. and perhaps as low as 5 per cent. This gives us food for reflection when we find the mortality from all statistics given by various authorities varying from 15 to 20 per cent. or even higher.

#### Summary.

1. Children are especially liable to empyema following pneumonia. Unless promptly relieved by drainage of pleura the prognosis is bad. With such relief the prognosis is good.
2. Pneumonia caused empyema in 50 per cent. of the cases here considered, and such cases were of severe type.
3. Tuberculous family history exerts little influence on empyema.
4. In about one-sixth of the cases the empyema was sacculated.
5. The pneumococcus was found in 50 per cent. of the cases where examination was made; the streptococcus in  $33\frac{1}{3}$  per cent.; the staphylococcus in 8 per cent.; the tubercle bacillus in 4 per cent., and no bacterium in 16 per cent. The pneumococcus produced the most virulent infection.
6. Chloroform was the anesthetic of preference. Deep narcosis is contra-indicated, owing to the danger of pus being drawn into the other lung from a ruptured bronchus.
7. In adults with general empyema two inches of the seventh and eighth or eighth and ninth ribs in the posterior axillary line should be resected. In children the same length of the seventh rib. Simple incision, with our present knowledge, is rarely advisable.
8. Operation is indicated as soon as diagnosis is made.
9. Irrigation of the abscess cavity with bichloride solution, 1-5,000, or carbolic acid, 1-100, is indicated, unless drainage is perfect and no sepsis is present. In children the solutions may be weaker.

10. The mortality from the empyema proper was 15 per cent. We may hope to reduce it to one-half that number by earlier and more radical treatment.

#### SEXUAL NEURASTHENIA IN THE MALE; A PLEA FOR A MORE ACCURATE USE OF THE TERM; TREATMENT OF THE TRUE FORM WITH CITATION OF CASES.

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NEURASTHENIA, while one of the most distressing conditions that comes under the physician's care, is, nevertheless, so certainly amenable to well-directed treatment that it is difficult to sympathize with the despairing or impatient attitude with which many practitioners regard it.

Oftentimes patients suffering from this trouble have made the rounds of a dozen physicians, failing in each instance to find the sympathetic consideration and the systematic examination and treatment that these cases require if a cure is to be made. It is impossible to frown down, or laugh away as purely imaginary, a condition that has produced so much wretchedness, and so much mental and moral deterioration; a condition that daily increases the population of sanitariums and asylums, and swells the list of suicides.

Whether because of its climate or because of its "strenuous life," New York has come to be regarded as a nursery for neurasthenics; but be that as it may, every physician here in active practice encounters many cases and is fully aware that they tax all the resources at his command. It is not my purpose to take up the subject of neurasthenia as a whole. On the contrary, I shall confine myself to a brief consideration of a special form, *i. e.*, sexual neurasthenia.

This variety differs from the others only in the multiformity of its symptoms, in their relatively greater severity, and in the fact that the chief source of the trouble, whether recognized or not by the patient himself, lies in some part of the genital tract. I say whether recognized or not by the patient himself, because it is necessary to emphasize the fact that this group of neurasthenics is much larger than is generally supposed.

The term is often applied loosely enough to those whose attention has become fixed upon the genital apparatus, either because of a real, or fancied lesion. It should, however, be restricted to those cases of neurasthenia in which a morbid condition of the genital apparatus exists, a condition which is demonstrated to be the source of the systemic disturbance by the fact that its cure is quickly followed by the disappearance of the neurasthenia.

The diseased condition of the genital tract may never have been suspected by the patient, and I feel justified in attempting to place the term sexual neurasthenia upon a purely histopathological rather than a psychopathological foundation, or a vague combination of the two, for the reason

that many apparently incurable cases of neurasthenia are incurable only as long as the real cause of the trouble is undiscovered. To the present lax use of the term sexual neurasthenia is due the fact that the possible existence of a lesion of the genital tract in cases of neurasthenia is generally lost sight of, except in a patient whose mind is centered upon the sexual organs as the source of his trouble.

An accurate use of the term will serve to emphasize the necessity of a thorough examination of the genital tract in every case of neurasthenia as a routine practice before attempting any line of treatment, for, not only does the commonly-accepted definition of the term cause the profession to overlook many real cases of this form of neurasthenia, but, on the other hand, cases are sometimes classed under this head which are not sexual neurasthenia at all, but which during or following some exhausting disease have developed a group of sexual symptoms dependent not upon a local lesion, but upon general systemic exhaustion. In such cases local treatment will not only be useless as a means of curing the disease, but positively harmful; since it will tend to confirm the patient in his belief that the seat of his trouble lies in his genital apparatus, while the failure of the local treatment will add weight to his despair. A careful examination in such a case of the genital tract having failed to reveal a lesion, not only will the assurance of this fact tend to shunt the patient's attention out of a dangerous groove, but the improvement that will follow a general restorative treatment will enhance his confidence in his physician and generally expedite his cure.

For an adequate appreciation of the general systemic disturbance to which a lesion of the genital tract may give rise, it is only necessary to consider the immense importance of the rôle that sexual life plays in the history of the individual and of the race, and to realize the relative richness of the vascular supply of the sexual organs and of their innervation from both the central and the sympathetic system.

It is not necessary to go into the anatomical and physiological relationship between this and the other great centers of reflex activity. Any attempt to do this would transcend the limits of a short paper, and would be merely covering the same ground that has been ably worked over by others. Suffice it to say that even a brief study of the facts will serve to destroy any illusion as to a limit in the number and variety of reflex disturbances that may arise from a disease of the genital tract. Nor is the amount of reflex disturbance any indication of the extent of the disease, or of its location.

Writers on the subject who have made an attempt to place the etiology of the disease upon a purely physical basis, have agreed in attributing the principal rôle in the causation to affections of the prostate, seminal vesicles and the spermatic cord. Although a few of the later observers admit that a lesion of the urethra may at times give

rise to neurasthenia, I am convinced from my own experience that they have not given this fact the prominence that it deserves.

I have seen patients presenting various neurasthenic symptoms, some of them of the graver type, who were found to have nothing the matter with their genital tract other than a stricture or a patch of granulation tissue, or a denuded area of the urethra, and a proof that this condition was the source of the whole trouble was afforded by the disappearance of the neurasthenia after the cure of the local lesion. I will confess that the result in the first case was somewhat of a surprise to me, and not until the experience had been repeated, not once but several times, was I led to appreciate the full extent of the importance of lesions of the urethral canal in the causation of neurasthenia. These cases included not only those in which there was a distinctly sexual type of neurasthenia, but some in which the sexual element played very little part. There was, as a rule, in these latter cases a recognition by the patient of the fact that the urethra was not in an entirely healthy condition, but this was not regarded by him as an adequate cause of the depression, the dispersion of attention and the lowering of mental and bodily tone from which he was suffering, but rather as perhaps one of many contributing factors.

Before passing in review a few cases that may serve to illustrate some of the points I have tried to make, it would be well, perhaps, to attempt a brief description of the general neurasthenic state.

Neurasthenia may be defined as a chronic, functional, nervous disorder, which is characterized by an excessive weakness, and irritability of the nerve centers, so that the patient is exhausted by slight causes and reacts immoderately to slight irritation. He complains of a feeling of mental depression, he tires quickly, cannot pursue a train of thought or a single line of work for a long time, and has lost all desire for physical or mental exertion. He is more or less indifferent to everything and occupations in which he formerly took an engrossing interest are felt to be a weariness to the flesh. He has a dull, empty feeling in his head. His memory has become defective. He has lost confidence in himself, and dreads going into company. His indecision is shown in a tendency to consult others upon matters in which formerly he was wont to make out his own line of conduct with alacrity. He is fretful, peevish, and easily upset by trifling annoyances. After he has gone to bed he lies awake for hours brooding over his trouble, or passing in review the events of the day, which one and all present themselves in the most unfavorable light, and when sleep finally comes to him he has disquieting dreams and awakes as unrefreshed as if he had been "out on a spree" the night before. He begins to feel he will never get well, that he is going into a decline, that he will become insane, or that he is getting "paresis" or that some other dreadful termination to his illness is bound to oc-



cur, and he often thinks of suicide as the only means of relief. In addition to these physical phenomena he may have hot flashes, with alternate flushings and palings of the face, or creepy chills along the spine and legs. He may have frontal or occipital headaches, usually during the day only, or a feeling of weight on the top of the head, or of constriction about the temples, or a burning spot on the vertex, or a general tenderness of the scalp and weakness or pains in the back of the neck. Sometimes he has dizziness, spots come before the eyes, and there are buzzing or ringing sounds in the head. He may have cold hands and feet and wandering pains in the back, chest or abdomen, or periods of numbness of the limbs. Sometimes about the lumbar region is a constant symptom. The special senses are not seriously affected, though in many cases the eyes soon tire from use, the eyeballs ache and the vision becomes blurred. The sense of hearing may be painfully acute. All the reflexes are as a rule exaggerated, though in extreme cases the nerve exhaustion may be so great that they are diminished. Acceleration of the pulse-rate from slight causes is a constant symptom. Pressure on some tender point of the body will raise the count ten to twenty beats where it will remain for one or two minutes (Rumpf's symptom). The respirations are normal in rate, but there is sometimes deficient expansion. The temperature is normal. The composition of the blood is often normal, though there may be more or less anemia. The heart's action is often feeble, encouraging the local congestion. The skin is active, perspiration being profuse and easily induced, and sweating of the palmar surface of the hands and fingers is sometimes a persistent and annoying feature.

The digestive function is often more or less affected, nausea, anorexia, flatulence or constipation, being common symptoms. Rarely there is a persistent mucous enteritis, together with a flabbiness of the belly-wall. There is often more or less relaxation of the ligaments of the stomach and colon with a consequent sagging of these organs, and an increased difficulty in evacuating their contents. There are probably few cases that do not show in the urine or feces some evidence of defective metabolism. In rare cases one finds a transitory albuminuria; a temporary glycosuria is more common, while excess of uric acid or calcium oxalate is the rule rather than the exception.

The sexual function is irritable and weak, and coitus is so unsatisfactory that after each indulgence in it all the symptoms are aggravated. Desire is more or less absent, and the pleasures of normal intercourse are diminished. Even in case the desire is unabated the first orgasm is usually premature, and there is prolonged wait for the second erection, while excessive indulgence may be followed by involuntary emissions. There is sometimes a tingling in, or a numbness of, the penis, or a feeling of wetness and coldness of the genitals. At times there is pain in one or both testicles, or in the scrotum, groin or urethra.

Itching of the skin of the scrotum is sometimes a prominent and distressing symptom, especially at night.

In cases in which the sexual symptoms are prominent there may be, in addition to the other physical phenomena enumerated in the beginning, a haunting dread of approaching impotence, or the feeling that the self-abuse or unnatural practices that have been indulged in at some former time are the cause of all the trouble and that the damage can never be repaired. Some feel that their appearance or movements betray their condition and are in consequence thrown into a flutter by a scrutinizing glance and avoid meeting people as much as possible. Rarely, in cases of neurasthenia there is an actual psychical impotence; more commonly there is a peculiarly capricious sexual preference in regard to person, condition or surroundings. Of course the entire catalogue of symptoms that have been enumerated does not fall to the lot of any one patient; in extreme cases he may have most of them, and even others in addition, while in the mildest he may complain only of lack of vigor, mental or physical or both, with a tendency to hypochondriasis. The bulk of the cases fall between these extremes.

In the current loose classification the term "sexual neurasthenia" has been applied to those cases only that manifest predominant sexual symptoms, while other cases have been called cerebral, gastric or spinal neurasthenia, according as the symptoms seemed to point more or less definitely to an abnormal condition of one of these great centers of reflex activity. The overlapping of the symptoms of these different varieties has added to the confusion of the whole matter and rendered the treatment of neurasthenia uncertain and therefore difficult. Manifestly the final proof of the correctness of a diagnosis is the therapeutic test. Whenever the removal of an actual morbid condition results in the cure of the neurasthenia it is but fair to assume that this lesion was the primary cause of the neurasthenic symptoms. The recognition of the important rôle played by lesions of the genital tract in the production of all sorts of morbid conditions in women has done more than anything else to raise gynecology to the dignity of a specialty. Is it not absurd, then, to allow a faulty classification of neurasthenia to mask the importance of such lesions in the male in the causation of seemingly remote and disproportionate systemic disturbances? By ceasing to limit the application of the term sexual neurasthenia to those cases which show prominent sexual symptoms, and extending it to include all those cases of neurasthenia in which lesions of the genital tract are found to be the source of the trouble, we shall not only be putting the use of the term upon a rational foundation, but we shall tend to secure a proper recognition of the far-reaching systemic effects of genital lesions in the male; and emphasize the necessity of a thorough examination of the genital tract in all cases of neurasthenia.

*Treatment.*—In the treatment of sexual neuras-

thenia two indications are to be met, namely, the removal of the genital lesion and the eradication of the secondary effects. In mild cases the cure of the genital lesion and the consequent removal of the original source of irritation will suffice for the cure of the neurasthenia, for the patients are in fairly good physical condition. In those of more pronounced types, however, the neurasthenic habit has become more firmly grafted upon the system and measures must be taken to attack the condition directly, either after the removal of the genital lesion, or, better still, while the course of treatment for the lesion itself is being carried out. These measures are in a word those calculated to build up the genital system, and re-establish a healthy mental and moral tone, and the choice of the particular means will depend upon the condition of the patient, his circumstances and environment. In rare cases complete change of surroundings and mode of life is imperative, but certain simple hygienic measures are easily carried out and are within the reach of patients in every walk of life.

*Local Treatment.*—We should never lose sight of the fact that true sexual neurasthenia is a disease of local causation, however effectively its secondary symptoms by their remoteness or severity may serve to mask the origin of the disease. Measures directed to the cure of the local trouble are, therefore, of prime importance and demand the earliest attention of the practitioner. The source of irritation may be congenital or acquired, and may be situated in any of the external or internal genitals, or at any point along the genital tract from the testis to the meatus. A long, tight prepuce, a partial or complete phimosis, a small meatus or a congenital stricture behind it, a hypospadias or epispadias, or an undescended testicle are among the congenital causes of sexual neurasthenia, while among the acquired causes are chronic urethritis, chronic prostatitis, chronic seminal vesiculitis and chronic epididymitis, to which may be added varicocele, tumors of the prostate, and of the testicle, traumatism of the external genitals and defective innervation due to traumatism, disease or exhaustion of the sexual center in the spinal cord. To these may be added indirect or contributing causes, briefly those productive of pelvic, and especially prostatic, congestion, such as sedentary life, constipation, hemorrhoids, ulcer of the rectum, fissure of the anus, prolonged bicycle riding, masturbation, onanism, and, above all, *coitus reservatus vel interruptus*.

These contributing causes must cease to act if we are to produce distinct and permanent benefit by our local treatment. The congenital causes are usually amenable to operative treatment, and since, with the exception of small meatus, congenital stricture, and redundant prepuce, they do not figure in the cases cited above, we need not take time to consider them at length. It is the acquired causes, therefore, that will receive our attention in the space that remains at our disposal and, first of all, chronic urethritis

as being one of the causes that has received least consideration at the hands of previous writers upon this subject.

This condition is characterized by lesions of the urethra, usually contributing tell-tale elements to the urine in the form of shreds, flocculi and coarse or fine flakes, most abundant in the first of the three classes, and usually entirely absent from the third. Microscopic examination of a centrifuged sample shows these flakes, shreds and flocculi, to be composed of pus, epithelium and bacteria, and representing the exudate that has formed upon areas of the urethra which are undergoing a more or less active inflammation. These areas may be situated anywhere along the urethra, but commonly anterior to the membranous portion. The bulb and the inch just in front of it are their favorite sites, and by the aid of the urethroscope they are seen to surround one or more gaping follicles, indicating that although the greater part of the urethra entirely recovered from the original urethritis, the inflammation has persisted in the depths of a few follicles, an ichorous discharge from which upon the adjacent surface of the urethra, together with the local congestion, combine to make it impossible for healthy epithelium to form at that point. There is another sort of hyperemic patch that contributes shreds to the urine, usually of considerable size, which is only secondarily due to a former urethritis. It lies directly behind a stricture, and is the result of the retention of a little urine behind the stricture after each evacuation of the bladder. The bacteria always present in the urine in considerable numbers are here allowed to multiply and decompose the urine without the hindrance in the way of constant accessions of fresh acid urine which prevents the same results taking place in the bladder. The irritation produced by this broken-down urine is sufficient to keep up an inflammation over the area upon which it rests, an inflammation which will never heal as long as the stricture remains to dam back a little urine after each act of micturition. Inasmuch as the inflammation is due to chemical irritation instead of specific organisms, it does not extend so deeply into the tissues, and in these patches therefore we see no gaping glands.

So far we have spoken only of those patches that contribute elements to the urine. There is another sort of patch seen by the aid of the urethroscope, which is altogether different in appearance, being yellowish-white in color and usually having a granular look. This has its origin in exactly the same way as stricture and represents an area the epithelium of which has been entirely denuded during the acute attack, the submucous layer infiltrated, and upon its surface an exudation of plastic lymph poured out which has subsequently become organized in the form of granulation tissue. These granulation areas, which are in reality a variety of indolent ulcer, receive slow but constant accretions until not only is the thickness of the lost layer of epithelium replaced, but a distinct elevation appears upon the surface



of the urethra, producing a narrowing of the canal depending in a degree upon the rapidity of accretion and the length of time over which the process has extended. A narrowing of the canal produced in this way is much more difficult to cure than an annular stricture, since the soft tissues on the opposite wall of the canal do not offer a sufficient amount of counterpressure upon sounds and dilators. In the case of an annular stricture, on the contrary, the entire ring of granulation tissue is capable of exciting counterpressure upon the dilating instruments, thus presenting the paradox of a morbid condition contributing to its own cure. As a rule, the strictures found in cases of sexual neurasthenia are large ones, for the reason that small strictures give rise to urinary symptoms so severe as to mask the more remote genital trouble and the reflex disturbances resulting therefrom.

These large strictures should be stretched by means of sounds, or better still by the Oberländer or Kohlmann dilator, as they rarely cause traumatism by their introduction and the distention is uniform and gradual. After each dilatation the urethra should be irrigated by the Janet method, using a solution of nitrate of silver beginning at 1 to 16,000 and increasing the strength up to the point of tolerance; the treatment should be given twice a week, sometimes every other day. In the case of a particularly dense stricture that will not yield to the treatment by gradual dilatation, it must be cut by the Otis urethrotome if over 15 F.; if smaller, by the Maisonneuve. A deep stricture of this sort requires the perineal operation on a urethral guide. Post-operative dilatation should be made, followed each time by silver nitrate irrigation of the urethra and bladder. If after the normal caliber of the urethra has been restored inflammatory areas still remain, the treatment is the same as that to be followed in cases in which no stricture is present. This consists in stretching the urethra a degree or two at each session by means of the urethral dilator in order to squeeze out the inflammatory accumulation of the infected follicles, and irrigations of the canal immediately afterward by the Janet method with silver nitrate solution in strength graduated from 1 to 16,000 to 1 in 2,500. In certain stubborn cases topical applications of silver nitrate solution through the endoscope may be found useful, beginning with a grain to the ounce and increasing its strength as high as ten grains. If the meatus is small it should be cut, as a narrow meatus is really a stricture, and not only interferes with the flow of urine, causing congestion of the bladder and prostatic urethra by back pressure, but renders examination and instrumentation of the urethra impossible.

Congenital stricture located in any part of the glans, from the meatus to the beginning of the fossa navicularis, should be treated in the same way by inserting a bistoury into the urethra to a point behind the stricture, and cutting outward and downward toward the frenum, ending the incision externally at a point that will increase

the size of the meatus to about 35 F. The subsequent contraction will reduce this to 30-32, which is large enough for all purposes of instrumentation.

Chronic posterior urethritis should be treated locally by means of the deep urethral syringe or by irrigations, the latter being by far the best, as they do not necessitate the irritation and possible traumatism attendant upon the introduction of the instruments into the inflamed posterior canal. By the Janet method of intravesical irrigations, the urethra is ballooned out and the solution brought into contact with the mouths of the follicles of the glands in every part of the inflamed area. Permanganate of potash and nitrate of silver are the best to use in this way. For daily irrigations permanganate is better, used in the strength of 1 to 10,000 to 1 to 13,000, but for less frequent use silver nitrate is to be preferred. Throughout the treatment it is usually well to administer internally an antispasmodic such as codeine, belladonna or hyoscyamus, if there is much irritation, and diluents in the form of one of the alkaline salts or potash or lithia.

The treatment of inflammation of that part of the prostate gland immediately surrounding the urethra may follow the same lines, but deeper involvement of this organ, as well as inflammation of the seminal vesicles, must be treated through the rectum. For this purpose irrigations by means of the rectogenital tube with a normal saline solution at the highest temperature that can be borne is of the utmost value. The irrigations should be made every night before retiring. In addition to these, massage of the prostate should be given every five to seven days.

While receiving massage by the rectum the patient stands with his feet wide apart, his body bent at an angle of 75 degrees, and his hands resting upon some support, as a table, or chair. The surgeon introduces his forefinger into the rectum and massages with a firm even pressure, and slight rotary movement of the finger-tip, beginning at the basis of the vesicles and gradually moving down to the apex of the prostate. A thin finger-cot will keep the finger clean and still allow the surgeon to thoroughly manipulate the parts. It is well to give the urethral irrigation of silver nitrate by the Janet method after each massage.

In place of the simple saline irrigation a hydro-electric douche may be used, an electrode being fitted into the rectogenital tube and connected with the positive pole of the galvanic battery. This has a sedative influence upon the inflamed tissues and is extremely grateful to the patient. After the inflammation and tenderness have left the parts the electrode may be connected with the negative pole of the galvanic battery, or with either pole of the faradic with the purpose of stimulating to absorption.

When varicocele is present the circulation in the cord is impaired and there is increased pressure upon the testis, epididymis and vas. This can be relieved by the open operation, the dilated



pampiniform plexus being excised and the cut ends remaining brought together and sewed. The beneficial result is not immediate, since there is a temporary thickening at the point of union of the severed ends, and not until this mass has been absorbed will the circulation in the cord be completely restored and the mechanical pressure entirely removed.

**General Treatment.**—Under this heading we must consider the diet, the digestion, regulation of the bowels, exercise and hydrotherapy, the cold sponge-bath being of primary importance. The sedative effect on the general nervous system of the cool sponge-bath is only equalled by the stimulation of the internal secretion, due to a temporary determination of an increased quantity of blood to the interior of the body. Unnecessary as it may appear at first glance, it is of some importance to give the patient minute directions as to the method of taking his sponge-bath.

Patients with an enfeebled circulation, and not accustomed to it, will shrink from the experience at first, for it must be remembered that many people are not accustomed to bathing; in fact the majority of people in the country towns, even the well-to-do, have no bathrooms in their houses. This applies especially to old towns, as in new settlements houses are built with all the modern improvements. Many people living in cities always take warm baths by preference—in fact, I know an athletic trainer in one of the largest athletic institutions in the world, who told me that he cannot take cold baths, and never does. It is well in such cases to direct the patient to stand in a few inches depth of warm water while sponging the body with cool water, and to carry out the process methodically for the first few times in the same order each time, the limbs being sponged first. Beginning, for example, with the left arm, taking next in regular order the right arm, left leg, right leg, neck, chest, abdomen and lower part of back, concluding by squeezing a spongeful held at the back of the neck so that the water will flow down the spine. Before the sponging of each segment of the body, the sponge should be dipped in cool water, and partly wrung out. Rapidity of movement is of prime importance. The entire sponging process should not take over two minutes and the vigorous rub-down following three minutes more. The patient should then dress as quickly as possible, and the eating of a light breakfast should not be delayed more than fifteen or twenty minutes. The brisk exercise has awakened an appetite, and the transient internal congestion has started a flow of gastric juice, which will be felt in these neurasthenics, who often have hyperchlorhydria, as a dull burning in the pit of the stomach if the breakfast is longer delayed.

The dull feeling in the head of which neurasthenics complain, the feeling of having been on a spree the night before, which is usually the result of a passive cerebral congestion, often vanishes under the vasomotor stimulation of the sponge-bath in a manner almost magical, and

this is one of the strongest factors in winning over the patient to a faithful carrying out of a procedure from which he at first instinctively recoils. In selected cases of sufficient vigor, sea-bathing, cold douching, the shower-bath, and the plunge may be advised, though in nearly every case the indications are best met by the cold sponge-bath.

Massage, in the hands of an expert and conscientious manipulator, is also good, as by this means the muscles and internal organs receive the same stimulation that would be derived from active exercise, while the central nervous system, having no demand for the expenditure of energy made upon it, receives the benefit of the improved circulation as clear gain. It is almost incredible to what a degree the tone of the body can be reduced in these cases of sexual neurasthenia, in which the symptoms are considered by some simply imaginary.

The diet in every case should be generous, and largely nitrogenous, the sugars and starches being greatly restricted. Rare beef and mutton, with plenty of the green vegetables, oysters, raw or lightly cooked, baked and boiled fish, eggs, milk, curds, koumyss, and fresh butter used in generous quantities, should form the foundation of the regimen. Highly seasoned dishes and sauces, pastry and rich desserts, pickles, pickled meats, or fish, and everything cooked by frying should be religiously shunned. Coffee, tea, and alcohol should be avoided, but water should be drunk freely. Most neurasthenics drink too little water, and it is well to prescribe a certain amount to be taken every day, say one and one-half to two quarts. Habitual tobacco smokers should be instructed to cut down their allowance to one-half, but, preferably, should limit themselves to one after-dinner smoke. There is nothing in the calendar so bad for neurasthenics as cigarette-smoking, especially if the smoke is inhaled.

Another, and by no means less important matter to attend to, is the regulation of the bowels. The cold bath in the morning already spoken of stimulates the secretions and the increased peristalsis which also results will of itself, as a rule, insure a movement. This, in conjunction with the establishment of a regular habit of visiting the toilet immediately before or after breakfast, has frequently served to completely overcome the sluggish, constipated habit so prevalent in this class of neurasthenics. In cases in which these measures are not sufficient of themselves to initiate regularity of the bowels the administration for a short time of fluid extract of cascara, twenty minims night and morning, or, better, fifteen minims, *t. i. d.*, will overcome the inertia and pave the way for the establishment of a periodic evacuation.

The patient's leisure hours should not be allowed to drag for want of quiet, wholesome amusement, and he should be as much in the open air as possible. Exciting and exhausting amusements, of course, prove injurious to those who are already bankrupt in nerve force. An

amount of exercise in the open air carefully regulated so as to fall within the limits of fatigue is another hygienic measure of the greatest importance. For those who have not much leisure, walking from their place of business to their homes is an excellent way of taking open-air exercise. Where the distances are great and fatigue easily brought on, it is well to walk but part of the distance and increase it gradually. By increasing the walking distance a block a day the patient will soon be able to cover quite a distance without much difficulty. More benefit will be derived from walking a few blocks briskly with head erect, shoulders thrown back, and arms swinging freely, than by languidly strolling along any number of blocks. Nothing fatigues so quickly as lolling along in the lackadaisical manner to which the neurasthenic is prone.

For the neurasthenic golf is one of the best forms of exercise, sailing and fishing are also splendid pastimes. Where surroundings are favorable he could not do better than to acquire a mild form of golf-mania. Golf is the valetudinarian's game *par excellence*. A moderate amount of horseback-riding with the use of an appropriate saddle (one for example of the McClellan type used by our cavalry, which obviates the pressure upon the perineum) is a form of exercise that cannot be too highly commended for almost every case of neurasthenia.

For the insomnia of which these patients complain, nothing does so much good as the establishment of regular hours of retiring and rising, the eating of a light supper followed by a few minutes of calisthenic exercise before going to bed. The calisthenics draw blood away from the brain and the light meal eaten before retiring, besides calling a certain amount of blood to the viscera for the process of digestion and thus still further reducing the cerebral hyperemia, supplies an amount of energy in excess of that required for the merely vegetative functions that go on during sleep, and hence affords a distinct addition to the vital resources of the body.

By such simple hygienic rules as those here laid down I have known a man whose weight had remained stationary for five years, but which was twenty-five pounds or more below the normal for his frame, to gain these twenty-five pounds in good, hard flesh within a period of three months.

In some of these cases the patients are so nervous that business has to be abandoned for the time, in which case a change of air and scene is of the greatest benefit. Probably nothing in this line equals a sea voyage for those who are not persistent sufferers from sea-sickness.

In the way of office treatment for the general nerve exhaustion static electricity has a decided value. The manner of its application, however, must receive careful consideration. A weak, nervous, irritable patient will be apt, at first, to regard such a thing as a dreadful ordeal, and steps must be taken to relieve him of his trepidation if we would not have this counteract the beneficial effects of the treatment. For this

reason he should be given a chance to get acquainted with the machine before any sudden attempt is made to treat him.

The insulation should be either positive or negative, according to the physical make-up of the patient. The cool breeze from the point electrode produced by grounding the negative pole is adapted to muscular and full-blooded cases, while the warm breeze resulting from grounding the positive pole is the one to be used for the feeble and anemic. The treatment should be given every other day, and the duration of each should be about ten minutes of the electric bath and five minutes of the breeze. The more vigorous local treatment with sparks is desirable only in cases in which some persistently tender point of the body does not yield to the milder measures. The improvement in the patient's condition is often apparent from the start, weak and anemic patients taking on color and weight, and the full-blooded ones showing the sedative effect of the positive electrization in the diminished irritability of the nerve centers, manifested by greater equanimity, diminution of the exaggerated reflexes and the ability to obtain sound and refreshing sleep.

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#### MASTURBATIONAL NEUROSES.

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OF late there has been a growing tendency to disregard the effects that masturbation exerts upon the nervous system of individuals in general, without sufficient regard for those who can ill afford such exertions or such excesses. To be sure, all youths do not possess that power of inhibition which permits of a healthy, liberal exercise of this function, and these unfortunates are the living examples which prompt denunciations and protests upon the perniciousness of the habit as a whole.

In one of the latest works on sexual debility by a distinguished and well-known physician, in the chapter on masturbation he has combated the old and time-honored belief that indulgence in this habit is the necessary prelude to both physical and mental degeneration, and, while not glossing over the dangers which may, under certain conditions, result from the habit, he has attempted to point out the folly of the hysterical denunciations which have been heaped upon it by pseudo-philanthropists and ignorant medical men.

In a paper read before one of the county societies of Western New York a short time ago, an intelligent and experienced practitioner defended the habit and championed the cause of those engaged in it.

The upper crust of society and some of our ultra-medical men contend that it is a perfectly innocent and legitimate form of exercise for the amusement and gratification of mankind, rich or poor, young or old, male or female. They claim



for it no statute of limitation, being alike harmless to the nerve-bankrupt as well as to the nerve-plutocrat, to the hereditarily strong as well as to the hereditarily weak. For my part this pastime has but two redeeming features: First, in this age of commercialism it is cheap and within the reach of all; second, from a purely selfish point of view, it helps to fill the coffers of the otherwise needy and struggling physician.

We are entering upon an age of nerve tension and consequently nerve suspension, nerve wear and tear. The acme of physical and mental activity has fallen from the decade extending from the fortieth to the fiftieth year to that extending from the thirtieth to the fortieth. Indeed, one of the great English experts sent to this country to study the secret of America's unparalleled leap into the commercial world found none other than young men at the head of all large industrial enterprises. Thus at an early age an unusual amount of brain activity is demanded from the growing youth.

To prolong the period of boy-life is to prolong the period of *growth*. This is a simple physiological law, and a very obvious one, and, whatever other things may be said in favor of purity, it remains, perhaps, the most weighty. To introduce sensual and sexual habits—and one of the worst of them is self-abuse—at an early age is to arrest growth, both physical and mental. And what is even more it means to arrest the capacity for affection.<sup>1</sup>

It is the duty of the medical men, the priests of the body, and the teachers of the truths of medico-psychology and physiology, to help and teach them by our counsel and our knowledge. We are about the only persons who can help a youth strike a happy medium between blissful but dangerous ignorance and prurient suggestive knowledge. It must not for a moment be inferred that every lad once addicted to this habit is a confirmed neurotic, for boys healthily constituted in body, mind, and morals do not tend to come under its influence to any very hurtful extent. But the habit of masturbation in certain other cases acquires a power that is dominating and destructive to body and mind. The causes of this are either an innate morbid strength of the reproductive instinct or much more frequently an innate weakness of the controlling faculties, or a lack of inherent brain stability, or an incapacity of organic repugnance to what is unnatural. Such weaknesses are apt to occur in the children of neurotic families. In such cases the habit becomes deep-rooted, and nothing short of exhaustion will satisfy their depraved appetite. The weaker and more nervous he becomes the more he indulges, till the point of absolute breakdown of body and mind is reached. It seems to get possession of him like an evil spirit, and to dull and paralyze all his better feelings and his natural instincts. The heredity and temperament are no doubt the true explanation of the oppos-

ing statements that are confidently made, on the one hand, that this habit seldom does much permanent harm, and, on the other, that it is the root of most of the evils of boyhood, and that it ruins the health of every one who has ever indulged very much in it. Like all other habits, it is the one who least can afford it physically and mentally that falls the easy victim.

The special point that I wish to make is that in these cases nerve disease of whatever form acquires a vise-like grasp that taxes the skill and art of the physician to the utmost before yielding.

Within the past few years I have been surprised at the number of such cases coming into the consultation room, often admitting, occasionally denying, the habit. From my experience it seems to have an opposite effect upon the two sexes—dulling the mental and making clumsy the physical exertions of the male—while in the female it quickens and excites the physical and psychical movements. The male is rendered hypoesthetic, the female hyperesthetic. The neurosis resulting from this habit is neurasthenia, the psychosis, hebephrenia.

Since Beard first described neurasthenia many diverse opinions have been expressed concerning the relationship of sexual irregularities to neurasthenia. Gilles de la Tourette, in his little monograph on neurasthenia, following the traditions of Charcot's school, dismisses the question of any sexual causation without discussion. Binswanger,<sup>2</sup> while admitting that nearly all neurasthenic persons acknowledged masturbation at some period, considered it not an important cause of neurasthenia, only differing from coitus by the fact that the opportunities for it are more frequent, and that the sexual disturbances of neurasthenia are, in the majority of cases, secondary. Rohleder, on the other hand, who takes a very grave view of the importance of masturbation, considers that its most serious results are a question of neurasthenia. Krafft-Ebing has declared his opinion that masturbation is a cause of neurasthenia. T. D. Savill<sup>3</sup> regards masturbation as an important causal agent of neurasthenia. Collins and Phillip,<sup>4</sup> in an analysis of 333 cases of neurasthenia, found that 123 cases were apparently due to overwork or masturbation.

Freund concludes that neurasthenia proper can nearly always be traced to excessive masturbation or to some interference with the normal sexual act. This view is confirmed by Gattel's careful study.<sup>5</sup> Gattel investigated 100 consecutive cases of severe functional nervous disorder in the clinic of Prof. Krafft-Ebing at Vienna and found that in every case of neurasthenia in a male (28 in all) there was masturbation, while of the 15 women with neurasthenia only 1 is recorded as not masturbating, and she practised *coitus reservatus*. Irrespective of the particular form of

<sup>1</sup> Die Pathologie und Therapie der Neurasthenie.

<sup>2</sup> Clinical Lectures on Neurasthenia, 1899, p. 37.

<sup>3</sup> Medical Record, March 25, 1899.

<sup>4</sup> Ueber die Sexuellen Ursachen der Neurasthenia und Augstuenrose, 1896.

<sup>5</sup> E. Carpenter. International Journal of Ethics, July, 1899.



the nervous disorder, Gattel found that 18 women out of 42 and 36 men out of 58 acknowledged masturbation.

Taking at random twelve private cases of this habit seen by me within a short time I found four cases of insanity and eight of neurasthenia. Two of the four cases of hebephrenia partially recovered, and the other two, who were persistent masturbators, have shown no improvement and are rapidly sinking into dementia. Of these four cases three occurred in one family, being brothers, with neurotic, high-strung nervous parents. In the two cases partly recovered treatment was long continued and at times discouraging.

Perhaps the most interesting case occurred in a young woman who was a neurasthenic and also afflicted with a general neuritis. Long-continued treatment helped to control the neurasthenic symptoms, but the neuritic pains would not yield to any form of treatment. Another case, occurring in a young lady, was treated carefully for a long period without any satisfactory results. The youngest patient was a precocious lad, aged six years, who showed marked proficiency in this habit, and was evidently a candidate for high neuropathic honors.

In closing, I wish to warn against giving a favorable prognosis in cases of functional nervous diseases with an underlying history of masturbation coupled with a neurotic family history. Cases giving no history of masturbation, which fail to respond to treatment after a sufficient interval, should be most rigidly interrogated, and in many cases the suspicion of masturbation will be verified. It is almost useless to try any form of treatment or to expect to obtain any definite results in the functional neuroses if this habit is not discovered and corrected. If, then, this habit is so widespread among the young; if it tends in suitable cases to undermine the physical and psychical forces; if it renders its devotees almost impregnable to rational scientific treatment, is it not a practice which should be discouraged rather than encouraged, defeated rather than surfeited? My own opinion may differ from others, but from my experience I would rather treat any other form of nervous disease than a case of masturbational neurosis.

## MEDICAL PROGRESS.

**Fractures of the Leg.**—HUSCHENBETT (*Centralbl. f. Chir.*, 1901, No. 24) describes what experience has taught him is a most serviceable splint for the treatment of fractures of the upper and lower parts of the shin. It is based on the theory that the ambulatory treatment is more and more becoming the method of choice among surgeons, especially in the aged among whom mere confinement to bed is disastrous. The details of the splint are that after reduction of the deformity and careful apposition of the fragments a carefully applied plaster dressing is applied from

the toe-bases to the upper third of the thigh. After this is dried ordinary heavy-weight hoop-iron is taken and made into a stirrup, with the vertical pieces extending all the way up each side of the lower extremity to the upper edge of the plaster bandage. The iron is cut and an inner and outer hinge is made in it opposite the knee. After bending the iron to make it conform carefully to the leg a water-glass bandage is carefully laid over it and the whole hardened. The knee is then exposed until the patient can produce flexion and extension and the ankle is freed by cutting away all that covers the foot. In this splint the patient walks on the bottom of the stirrup and the thigh receives the weight transmitted to it through iron braces.

**Hydrocele.**—OHL (*Deutsch. Zeitschr. f. Chir.*, B. 59, 45 and 6, 1901), reports the immediate and remote results in nineteen cases of simple hydrocele operated on by the method suggested by Winkelmann in 1898. Briefly, this consists in opening the sac, evacuating the contents and then wrapping the tunica carefully about the testis and replacing it within the scrotum. The skin is then closed by some of the well-known procedures. Among the series here reported many were followed up by the operator himself and the others by the family physicians. In all it was found that the testicle was mobile, insensitive and in every way normal. The scar-tissue about it was of very moderate extent and did not interfere with any of its features. In many of the cases it took a most careful examination to show how the normal and operated sides differed. The ease and rapidity with which the operation may be done and these very flattering results seem to make the operation the one of choice.

**Tonometric Examinations in Cardiac Cases.**—Complicated apparatus necessitating special experience is of very little benefit in assisting the ordinary physician to follow the results of treatment, and it would seldom be possible for one to use Gaertner's tonometer which is employed so advantageously by T. SCHOTT (*Med. Rec.*, June 29, 1901) in his Nauheim treatment. By this instrument the differences in blood-pressure in the smaller arteries are easily determined. He has made a large number of experiments with this apparatus and finds that the results are reliable and constant. The action of the Nauheim bath is especially noted, and he finds that after the patient has been in the bath from two to five minutes both the pulse and respiration decrease, but that the blood-pressure constantly rises for a period of from eight to ten minutes. A very decided change is usually seen, unless the condition of the heart is such that the bath treatment is contra-indicated. In several cases where compensation could not be hoped for or in severe cases of myocarditis, the blood-pressure was much diminished and the general condition of the patient impaired.

**Mortality after Gall-Stone Operation.**—H. KEHR (*Munch. med. Woch.*, June 4, 1901), the well-known specialist, reviews 100 operations for

gall-stones done by him during the last year and concludes that the mortality at the present day is very low if the operation is performed before pathological changes have set in to an advanced degree, but that it is high if such conditions as carcinoma and purulent cholangitis are encountered. Of the 16 patients that were lost, 4 died of cholemic hemorrhages, in 5 the stomach or intestines were involved in the operative procedure and 4 cases were complicated by purulent inflammation and cancer. Only one died as a result of operation, an extremely emaciated woman, sixty-two years of age, who developed pneumonia five days after a cystectomy and drainage of hepatic duct. The mortality was considerably higher among males than females which may be due to many causes; thus, cancer of the pancreas is more frequent in men, they often stand narcosis and manipulation of the peritoneal cavity less well than women and their general condition often is less satisfactory. Pneumonias generally are right-sided and are often embolic or a result of direct infection by way of the lymphatic channels. In conclusion, the author draws a comparison between the medical and surgical treatment of cholelithiasis; the former cures 40 per cent. of cases; the latter, 95-98 per cent.

**Typhoid Spondylitis.**—A case of typhoid spine is related in detail by A. KUHN (*Munch. med. Woch.*, June 4, 1901). The patient was convalescing from a severe typhoid which had been complicated by thrombosis of the right femoral vein, when, on the eighty-third day of his disease, after having been free from fever for thirty days, pain developed in the left lumbar region. This disappeared after Priessnitz packs, but returned after six days when the patient was allowed to get up for the first time. The spleen was slightly enlarged and friction sounds could be heard over it. Soon the spinous processes of the lumbar vertebrae and the sacrum became tender to percussion and after a little over a month a distinct kyphosis developed in the region, with fever and exaggerated patellar reflexes, but no sensory, bladder, nor rectal disturbances. Convalescence was satisfactory and after six weeks the kyphosis had almost entirely disappeared. The diagnostically important symptoms which this case presented were the vague lumbar pains and tenderness, later more strictly limited to the spine, the distinct swelling over the area and lastly the kyphosis. The kyphosis has a certain resemblance to that of tuberculous spondylitis and one must in these cases always rule out an exacerbation of an old tuberculous process revived by the typhoid fever by the previous history, general condition and examination of the lung. Spinal symptoms, indicating involvement of the cord and of such character as incontinence and retention of urine, disappearance of patellar reflexes, paresis, spasms of the adductors, may occur but often, as in the cited case, are absent.

**Tapping in Pleural Effusion.**—In an editorial the *Therapeutic Gazette* (June 15, 1901)

gives a few remarks upon the rational treatment of pleural effusions. Many of the older physicians still believe in the administration of concentrated saline purges or hydragogue cathartics from the vegetable kingdom, unmindful of the fact that this procedure often fails to remedy the condition owing to the plastic exudate with which the pleura is covered which prevents all absorption. Attention is called to a mistake often made in the drawing off of fluid, namely, the too great hurry with which this small operation is done. Thus, neighboring parts are suddenly rather than gradually relieved of pressure and secondary changes are liable to follow in that the lung may tear itself free from adhesions or circulatory disturbance may occur. In case of pus, free drainage is, of course, indicated, but it may be well to relieve pressure several hours before the operation by preliminary puncture.

**Patellar Suture.**—BARKER (*Archiv f. klin. Chir.*, B. 63, H. 4) states that in twenty-one cases he has sutured the fragments of the broken patella together in the following manner under both local and general anesthesia. The lower fragment is held by the thumb and forefinger and the joint opened by passing in a knife horizontally with the cutting edge upward toward the long axis of the patellar until that bone is encountered. Through this little hole the fluid and blood within the joint are pressed out. This emptying of the joint is important as decreasing the dangers of sepsis. A specially designed needle is then passed into this opening, behind both fragments and through the tendon to just beneath the skin above the upper piece. Its point is then cut down upon and a wire thread passed through its eye. It is then drawn out of the lower hole leaving the wire free in each incision. The needle is then passed in front of the fragments and receiving the upper end of the wire at the upper hole is withdrawn. The two fragments are now freed of clot and tissue by vigorous rubbing in the hands of an assistant and when opposed are fixed by twisting the wire up. It is then cut off and the stump hidden against the lower fragment. No joint reaction has occurred from its presence.

**Pregnancy.**—From a study of numerous cases, HERMANN KELLER (*Annales de Gynec. et d'Obstet.*, May, 1901) finds that the period of accouchement corresponds to menstruation in the diminished activity of the nutritive processes. This period is characterized by a high percentage of nitrogenous matter in the urine, but by diminution in the volume of the urine, so that the total daily urea is low. This change is due to insufficiency of the liver functions, and is most marked in multiparae. Once established, this hepatic insufficiency makes the woman more susceptible to renal difficulties, and to morbid influence, such as septicemia. The author thus finds new proofs in favor of Pinard's theory of the hepatotoxemia of pregnancy. Rest, milk diet, and the



drinking of water and diuretics facilitate the elimination of these toxic matters and tend to lessen their formation.

**Nerve-Stretching in Chronic Ulcer.**—Thirty cases of the chronic ulcer of the leg by nerve-stretching are reported by CHIPAULT (*La Méd. Moderne*, June 12, 1901). The technic includes (a) stretching of the musculo-cutaneous, internal saphenous, sciatic or external popliteal; (b) treatment of the ulcer itself, either by total ablation followed by suture, or curettement with disinfection when ablation and suture are impossible. Cure of the ulcer was effected in 26 cases, in some of which, however, there was a renewal of the trouble after a considerable interval.

**Acute Colitis in Children.**—It is a remarkable fact that the occurrence of acute colitis, or ileocolitis, in epidemic form is almost unknown, or at any rate unrecorded, in England, says EDMUND CANTLEY (*Lancet*, May 25, 1901). A small epidemic broke out in a London barracks, in rooms opening on to a common staircase. There were 13 families, consisting of 13 women and 30 children. Six children and 3 women were attacked and 4 of the children died. No origin could be found for the epidemic. In each case the onset was sudden, with vomiting, diarrhea and fever. At postmortem the whole large intestine was found to be inflamed and thickened, the inflammation extending up into the ileum. The author thinks irrigation to be of no service in the treatment of these cases, but supports the system and stops the diarrhea and vomiting by internal medication.

**Neutral Red as a Stain for Nucleated Red Blood-Cells.**—A very simple method for bringing out nucleated red cells is given by A. BETTMANN (*Münch. med. Woch.*, June 11, 1901). A small platelet of elder-pith is saturated with a concentrated aqueous solution of neutral red, a small drop of blood is then placed over it and the platelet then examined in the hanging drop. On viewing under the microscope, at first neither nuclei nor granules of the leucocytes is visible; the erythrocytes are stained a faint brownish-red and their nuclei are the only prominent structure visible, owing to their deep-brown color. The stain is admirably suited to study the changes which occur in the nucleus. This diminishes in size after a few minutes and often becomes star-shaped, and small granules, separate and lie free in the protoplasm. After several hours the nuclei become decolorized, but they again become evident upon the addition of more neutral red. If the specimen is prevented from drying and if examination is completed within an hour, there is no danger of confusing the nuclei of the white cells with those of the red. The method is recommended especially for the rapid identification of nucleated erythrocytes.

**Cystic Affections of the Breast.**—The symptoms of cystic conditions of the breast are varied and many. The enlargement of the axillary glands in malignant disease is held to be more or less pathognomonic of such a condition, but

in reality this is not the case, says A. M. SHIELD (*Brit. Med. Jour.*, May 18, 1901). There is scarcely any breast swelling, which exhibits any variation in size that is not cystic. Pain and local tenderness are found with the excessive secretion of fluid and disappear with its exit. Dimpling of the skin over a cyst is very often present, though this is supposed to be another sign of malignancy. In regard to treatment the author is conservative. Use the trocar and cannula in certain selected cases and, having made a diagnosis, the author advises that the tumor be dissected out, with free drainage in after-treatment in order that the blood serum may not be allowed to collect and become infected.

**Urinary Calculi.**—P. J. FREYER (*Brit. Med. Jour.*, May 25, 1901) gives the following as characteristic symptoms of stone in the bladder: (1) Increased frequency of micturition; (2) pain on micturition; (3) hematuria; (4) sudden stoppage of the flow of urine. The rectum should be examined to find out the condition of the prostate and seminal vesicles and to determine the presence or absence of organic deposits at the base of the bladder. The best method of making a diagnosis is by sounding. One should never use force in this procedure and thus set up traumatism. The author uses the Mercier solid steel sound, commencing with No. 6 English at the shaft and No. 10 at the bulb; in children, No. 2 shaft, No. 5 bulb. Small stones may often be made out with the aspirator and cannula, such as are used in the Bigelow operation. Suprapubic or perineal section may be necessary to make an absolute diagnosis. Pain in the loin and hematuria are the characteristic symptoms of renal calculus. Violent exercise, particular horseback-riding, will bring on a typical seizure. The presence of mucus and pus in the urine is an important symptom. Sometimes the stone can be located by means of the X-ray. Littre's electric cystoscope has in many cases been a most important means of locating calculi in the ureter, especially when they lie in the mouth of the urethral orifice. As a rule, the symptoms of urethral calculi are very obscure and the diagnosis is extremely difficult.

**Roentgen-Rays in Warfare.**—J. HALL-EDWARDS (*Lancet*, June 22, 1901) claims that his experiment with the Roentgen-rays at the base hospital in searching for bullets, whole or fragmented, and for pieces of shell, demonstrates the wisdom of carrying a very complete outfit as part of the medical equipment of each army hospital. The number of retained missiles is very small when compared with the number of all wounds made by them, simply because this includes a preponderating number of mere soft-part damage. In the number of penetrating bullet and shell wounds, however, whether perforating or not, a much larger percentage shows retained foreign bodies than had ever been supposed. His field of observation was not very large, because in the base hospital the patients have been filtered through from a number of field hospitals, where beyond question many good subjects for radio-



scopic investigation are lost. Out of 193 cases under him for X-ray diagnosis the surprising large number of 65 gave foreign bodies imbedded in the tissue. Of the total wounds 54, with 29 lodged masses, were in the thigh, hip, knee and leg (*i.e.*, between the ankle and the trunk); the hands had 19 total wounds with 8 retained projectiles; the upper extremity, 69 wounds with only 16 bullets found; the chest showed 7 missiles out of 18 wounds and the head 1 in 11 wounds. The most important element, however, was the unvarying precision of the diagnosis in every case.

**Consumption and Excretion of Food During Training.**—In a careful analysis of all food consumed and all products excreted by four members of the Harvard crew in 1900, M. O. ATWATER and F. G. BENEDICT (*Boston Med. and Surg. Jour.*, June 27, 1901) found that they ate about the same as members of other crews, and that their food had about 50 per cent. more protein and 16 per cent. more energy than that of men at ordinary occupations. They digested their food about as completely as most men, but one notable feature was the fact that the nitrogen excreted by the kidneys and intestines was much less than the total nitrogen of the food. The amount which was apparently stored in the body corresponded to an average of not far from 24 grams of protein per day, if no allowance is made for perspiration. Even after making such an allowance they were undoubtedly storing up considerable nitrogen, and it is questionable whether they are in good physical condition while doing this and also whether they receive the best diet suited for men training for such races.

**Alcoholic Neuritis.**—E. F. BUZZARD (*Lancet*, June 8, 1901) studied 120 cases of alcoholic neuritis in order to see to what degree alcohol was the sole etiologic factor in this disease. In opposition to most authorities he finds that "spirits," and not beer will more often produce the disease. Ninety-eight of the patients were females and 22 males. The males had an average age of 42.8 years; the females, 38.5 years. The writer thinks that in England alcoholic neuritis is more often found as a sequel to spirit-drinking than in other forms of alcoholism; also that clinical experience and evidence are antagonistic to the idea that arsenic is the cause of alcoholic neuritis. If good statistics were made in Scotland, where the disease is said to be rare, the average would be the same for spirits as in London.

**Diacetic Acid in the Urine.**—S. LIPLIAWSKY's (*Deutsche med. Woch.*, No. 10, 1901) modification of Arnold's test eliminates some of the fallacies open to this and to Gerhardt's method. Two solutions are required, one containing 1 per cent. of paramidoacetophenon, made more soluble by the addition of 2 c.c. of concentrated hydrochloric acid, and a 1-per-cent. solution of potassium nitrite. Six c.c. of the first solution and 3 c.c. of the second are mixed with the same amount of urine; a drop of ammonia is added and the whole well shaken. Ten drops to 2 c.c.

of this mixture, according to the amount of diacetic acid present, are then added to 10 to 15 c.c. of sulphuric acid, 3 c.c. of chloroform and 2 to 4 drops of ferric chloride. After one-half to one minute of careful agitation the presence of diacetic acid is shown by a violet tinge to the chloroform, while in the absence of this substance it becomes yellowish or reddish. The salicylates or other drugs do not affect the delicacy of the reaction which responds to 1-40,000 of diacetic acid.

**Iodide of Potash in Asthma.**—SIR W. T. GAIRDNER (*Lancet*, June 8, 1901) says that the use and knowledge of this drug in asthmatic affections are comparatively recent. Neither Cogswell (1837) nor Bouret (1855) made any mention of the employment of this drug in asthmatic affections, although both of them wrote excellent treatises on the therapeutic action of iodine and its compounds. In the late "fifties" Dr. Jephson of Leamington prescribed potassium iodide for the Rev. Dr. Barclay of Currie parish, who had suffered for many years with asthma and bronchitis. The prescription contained as many as fifteen ingredients and Dr. Barclay, to find out which one brought about the desired effect, tried each one separately until he discovered that it was the iodide of potash.

**Uncinariasis.**—This disease, due to a small thread worm (*Ankylostoma duodenales*), is very common in many of the tropical countries, but it is rarely found in natives of this country. T. A. CLAYTON (*Phil. Med. Jour.*, June 29, 1901) reports a case in a boy, nineteen years old, living in Virginia, who had presented signs of advancing pernicious anemia for several years. His mental development was also affected by the disease, but, strange to say, he had never had any intestinal symptoms. The hemoglobin was 30 per cent. and the red blood-cells 1,577,000. A search in the stools showed the presence of numerous ova of the worm and the administration of thymol caused the discharge of no less than forty-four of these worms.

**Localized Vascular Disease.**—Several obscure conditions, such as erythromelalgia and Raynaud's disease, have been looked upon as resulting from derangements of parts of the nervous system, probably the vasomotor or trophic centers. Some doubt has been thrown upon this idea recently by several investigators, especially B. SACHS and A. WIENER (*Phil. Med. Jour.*, June 29, 1901). A case of erythromelalgia was reported by them some time ago in which a foot was amputated on account of a large ulcer and a careful microscopical examination showed that nearly all the blood-vessels had become degenerated and sclerosed; they concluded that too much stress had previously been laid upon the nervous origin of these peculiar lesions. Since then they have followed three cases which presented symptoms of severe paroxysmal pains localized in parts of their extremities, sometimes symmetrical, usually confined to the toes or fingers, and finally followed by gangrene of a dry,

white character, necessitating amputation. In all these instances a marked phlebo- and arterio-sclerosis was found together with a general neuritis, but it is believed that the vascular lesion was an important concomitant condition and there exists an intimate relation between the disease of the peripheral blood-vessels and many of the trophoneuroses.

### THERAPEUTIC HINTS.

**Boils.**—Of undoubted value are remedies which improve the general condition, such as iron, arsenic, cod-liver oil, hypophosphites, and syrup of calcium lactophosphate. The urine should be examined as diabetes or Bright's disease may be the cause of the furuncle formation. In long-standing cases local irritations should be sought for, even old smoking jackets, sweaters, etc., being sources of infection. A boil may often be aborted by the application of iodine, boric acid, ichthyol, etc. Heitzmann's plaster for this purpose is:

℞ Ac. salicylici . . . . . gm. 8.0 (3ij)  
Emplast. saponis . . . . . 30.0 (3ij)  
Emplast. diachyli . . . . . 15.0 (3i)  
Spread on cloth.

Another useful formula is:

℞ Tinct. iodi . . . . . gm. 4.0 (3i)  
Ac. tannici . . . . . 2.0 (3ss)  
Pulv. acaciæ . . . . . 2.0 (3ss)

Or a few drops of carbolic acid may be injected into the boil. The following ointment may be applied if pus has already formed. It serves all the purposes of a plaster, allays pain, and does not favor reinfection. It is

℞ Iodoformi . . . . . gm. 4.0 (3i)  
Ung. vaselin. plumb. . . . . 30.0 (3i)  
Spread on lint.

Where boils are multiple, the intervening and surrounding skin should be smeared with equal parts of zinc oxide and vaseline with four per cent. of boric acid. After the boil has burst the cavity must be treated on ordinary surgical principles.—"Reference Handbook of the Medical Sciences."

**Fractures of the Olecranon.**—The forearm being held in extension, and the fragments adjusted, a compress of absorbent cotton or several thicknesses of soft woollen cloth is applied just above the apex of the process and held by strips of strong adhesive plaster laid on obliquely from above downward, and from below upward, so as to form a figure 8. These strips should not encircle the limb or compress the veins anterior to the joint. Now bandage the extremity from fingers to anterior fold of axilla with a flannel bandage, and then put on a plaster-of-Paris splint. If all goes well leave the splint on for two weeks and if there is still a little separation of the frag-

ments remove and readjust the compress. The splint should be continued for six weeks, being reapplied about every ten days, the limb being bathed and massaged at each readjustment. After six weeks begin gentle passive motion and gradually increase motion and massage. When the tendon of the triceps holds the fragments in apposition a plaster splint is all that is necessary. In adjusting these splints see that the hand is held in supination, so that the olecranon is brought more truly in the axis of the olecranon fossa. It will probably be more comfortable and do no harm if the hand is put in semipronation after two weeks.—W. L. ESTES in "The Treatment of Fractures."

**La Grippe in Children.**—Quinine is said to be deadly to the influenza bacillus, yet many writers oppose its use during any stage of the disease. DESPRES recommends sprays of chloroform-water, 5 to 1,000. Others advise spraying the nose with normal saline or boric-acid solution, then anointing with mentholated vaseline 1 to 10. Infants can safely nurse mothers with grip, but must not be fed from a spoon or cup used by the mother. The internal treatment consists of

℞ Liq. ammon. acetat. } aa. gm. 60.0 (3ij)  
Vin. mariani }

Sig. A teaspoonful in hot, sweetened water or lemonade every two hours.

For the later muscular aches and pains lactophenin and salol are effective. The pulmonary system may be stimulated with ammonium carbonate and nux vomica in small, frequently repeated doses. Bronchial adenitis requires some such remedy as iodide of iron arhythmia and tachycardia require sulphate of sparteine, gm. 0.0075-0.015 (gr.  $\frac{1}{16}$ - $\frac{1}{4}$ ), and angina pectoris demands nitroglycerin or nitrate of amyl. If paroxysmal tachycardia is to be prevented, the digestion must be carefully looked after. Ear troubles must be treated early.—M. P. HATFIELD in "The Acute Contagious Diseases of Childhood."

**Foul Breath.**—The teeth should be thoroughly cleansed, the gums sponged with myrrh and water, and one of the following allowed to dissolve in the mouth:

℞ Pulv. cinnamomi. }  
Pulv. cardamomi } aa gm. 2.0 (3ss)  
Pulv. pimentæ.  
Sacch. alb. . . . . 4.0 (3i)  
Mucilag. acaciæ q.s.

Make fifty pills.

The digestive functions should be regulated, bad teeth attended to, and the mouth washed after meals with

℞ Thymoli . . . . . gm. 0.5 (gr. viij)  
Sod. borat. . . . . 1.0 (gr. xv)  
Aqua, ad. . . . . c.c. 500.0 (Oj)

—E. E. WALKER in "Reference Handbook of the Medical Sciences."

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SATURDAY, JULY 13, 1901.

## FORMS OF DYSENTERY.

We are entering upon the season of the year when sporadic cases and even more or less limited epidemics of dysentery occur in this country. The study of the disease by our army surgeons in the Philippines where dysentery is almost constantly endemic has thrown light on certain disputed points in the etiology and clinical forms of the disease that will be useful to the practitioner at home. The conclusions recently (April, 1901) published by the Chief-Surgeon's Office at Manila show the existence of three forms of dysentery, namely, mild catarrhal dysentery, scarcely more than a passing diarrhea and practically never fatal except in the very old or in patients extremely run down; specific dysentery due to the *bacillus dysenteriae*, described by Flexner; and amebic dysentery caused by a special form of ameba, very probably a different organism from the common ameba of the intestine. Specific dysentery, the acute infectious form of the disease which produces so much havoc in camps, is probably not confined to the tropics though it is seen most frequently and in its severest form in hot countries. Prof. Osler has suggested that sporadic epidemics of this form of the disease

apparently occur even in this country. Our dysenteric outbreaks in jails and camps exhibit at times all the clinical features of tropical dysentery. What the source of the specific microbe is under home conditions is difficult to say. Any observations that would tend to throw light on the method by which the micro-organism preserves its vitality between epidemics would be of great value for the prevention of the disease. The only absolutely sure method of differential diagnosis from other forms of dysentery in these cases is the agglutinative reaction of the blood serum of patients suffering from this form of dysentery upon liquid cultures of the *bacillus dysenteriae*.

American observations in the Philippines appear to settle definitely the status of amebic dysentery. There would seem to be no room for reasonable doubt left that certain forms of amebae are pathogenic for man and productive of dysentery as well as liver abscess. The question has been very much discussed of late years. The pathogenic amebae are larger in size than amebae found in the stools of patients ill with other diseases than dysentery or even at times in the passages of perfectly healthy individuals. In the *amaba dysenteriae* red blood-corpuscles are frequently found enclosed. This phagocytic action as regards red blood-cells is never noted in the smaller non-pathogenic ameba, nor in the amebae of straw when such are introduced into the system. Neither of these latter organisms produces any effect when injected into cats, while what is recognized as the true *amaba dysenteriae* never fails to produce dysenteric disturbance in these animals.

The most interesting fact in the investigations in the Philippines is the hope of a curative serum for acute dysentery. This disease is usually very fatal in its ravages and has always been the main cause why armies at all times have lost more men by sickness than by bullets. The diagnostic value of the serum reaction seems to be beyond question. When this agglutinative power can be produced in animals their blood serum will, if injected intraperitoneally at the same time as bowel injections of virulent cultures are made, always protect the animal experimented upon. The work on the curative serum is, however, as yet in a purely tentative stage.

The best treatment according to the experience in the Philippines seems in acute cases to be the limitation of diet and the thorough cleansing of the bowel by large saline enemata. At the be-



ginning of dysentery, in sthenic cases, starvation for several days with a liberal allowance of water to replace that lost by the diarrhea seems to be indicated. The experience in children's summer diarrheas in recent years adds weight to these procedures as the most important therapeutic measures. Stimulants should be used, but only for absolute indications. Contrary to the usual practice the diet, when food is allowed in small quantities, should not consist of concentrated nitrogenous material, meat-juice and the like, but rather of diluted carbohydrates. The various cereal foods in thin broths are best. Somehow these do not seem to furnish the material for microbic growth that nitrogenous material does and, moreover, the acid fermentation to which these substances are especially liable makes the material present in the intestines an eminently unsuitable medium for the growth of bacterial parasites. With reference to amebic dysentery less is known, although here, too, limitation of the diet to the absolute needs of the individual and thorough cleansing of the bowels seem the most successful remedial measures.

#### THE RED CELLS AS BACTERICIDES.

THE problem of the body's total unsusceptibility to non-pathogenic organisms and the destruction that often overtakes even infectious germs, when they have entered the circulation in not overwhelming numbers, seems to have met with a fairly adequate explanation by the theories of the bactericidal powers existing in the normal blood or making their appearance in response to the stimulation afforded by the presence of the invaders. These powers of self-defense have been almost universally attributed to bodies held in solution in the serum and emanating from the leucocytes, though the older idea that the white cells themselves by phagocytosis participated in the struggle has been overthrown by the researches of Buchner, Kolb and Schuster, who found that the bactericidal power of serum whose leucocytes had been destroyed by freezing was undiminished. In one case at least, however, that of the cholera vibrio, the origin of the specific anti-body is thought to be independent of the leucocytes and according to Moxter is to be found in the blood-forming organs, but the red blood-cells have been totally left out of account in the theories concerning the body's means of resistance, perhaps because Buchner's early researches gave such unpromisingly negative results. L.

Heim (*Münch. med. Wochenschr.*, April 30, 1901) has lately made public some observations which tend to cast doubt on the propriety of this rigid exclusion of the erythrocyte from the protective cycle. In the earlier experiments the blood was subjected to preliminary taking in order to extract the contents of the cells which it has been supposed furnished nutrient media for the organisms, but it was found that this step was unnecessary and that the same results could be reached by using unchanged blood. If typhoid bacilli in pure bouillon culture are added to fresh defibrinated blood and the mixture is allowed to stand at body temperature, a gradual change in both the red cells and the bacteria takes place which reaches its maximum in about four days. The blood-cells first become pale and biscuit-shaped or take the thorn-apple form; later on they disappear entirely. The bacteria lose the power of motility and become aggregated in clumps which are not so typical, however, as in the true agglutination, and ultimately become swollen and granular.

In the presence of red cells, therefore, a destruction of typhoid bacteria takes place which differs from the ordinary bactericidal action of the serum in the time of its occurrence. What is commonly known under this designation appears during the first twenty-four hours of the presence of the bacteria in the blood, but then disappears and gives way to increased activity of growth, while here we have a second inimical influence which is due to anti-bodies which do not exist preformed in the body, but are manufactured only owing to the stimulus afforded by the vital processes of the micro-organisms, and this property does not become manifest till the power of the alexins has risen to its highest and fallen again.

The former view was that under favorable nutritive conditions, after once the first resistance of the alexins was overcome, the germs multiplied freely in the body till death occurred or a sufficient quantity of the specific antitoxin had been produced to make recovery possible. Buchner has expressed the opinion that all destruction of red blood-cells, as in burns, freezing and other conditions, is dangerous because it involves the setting free of just so much nutritive medium for bacterial growth, and this view is not contradicted but rather supplemented by these later observations. The contents of the erythrocytes may furnish suitable food for the bacteria or at least not prevent their development, but this is true only for a certain length of time after

which the invaders become subjected to degenerative processes. The danger to the body is not over, however, for it is probable that the bodies of the parasites and the substances extracted from them are toxic, while in addition the peril from the decomposing red cells lies not only in the increased growth of germs, but also in the fact that the development of the micro-organisms on broken-down body-cells may be attended by the formation of certain substances hostile to the body.

#### ETIOLOGY OF CEREBROSPINAL MENINGITIS.

FOR a number of years the bacterial origin of cerebrospinal meningitis has been a well-established fact. In 1885 Lichtenstein found a few cocci in the meninges of a case which had suffered from this disease, the organisms being single or grouped like the gonococcus in the white cells. Two years later Weichselbaum described a diplococcus situated solely within these cells, which, when inoculated into the meninges of dogs produced the lesions of meningitis. This he named the *diplococcus intracellularis meningitidis*. Since 1895, when Jäger demonstrated the presence of this germ in twelve cases, it has usually been observed by others in epidemic cases. For example, Councilman found it in 31 cases out of 35.

These are well-known facts, but the ordinary means of transmission of the disease is still a disputed point. Bacteria may enter the meninges (1) by direct communication from some cavity, such as the middle ear or nose, where they happen to be present; (2) by direct extension from an adjacent inflammatory process, such as mastoiditis or facial erysipelas; (3) from a distant process, such as pneumonia or endocarditis through the blood. Which route is followed by the diplococcus intracellularis is undecided, as is the medium by which it is conveyed.

The possibility that dust is an important vehicle is suggested by Buchanan (*Journal of Hygiene*, April, 1901) who has observed a marked relation between the occurrence of cerebrospinal meningitis and the character of occupation. The fact that it has been recognized chiefly among soldiers in barracks and among prisoners has led to the assumption that it is connected with defects in hygiene of their surroundings. Buchanan, however, has been unable to prove this point, and has been led to regard dust as an important vehicle and hence dusty occupations as a predisposing cause.

Three epidemics occurred at the Central Prison at Bhagalpur, Bengal, from 1897 to 1900, with 47 cases and a mortality of 68 per cent. Before the epidemics there had been in the prison one case in 1889, one in 1890, six in 1891, and one in 1892. Six months intervened between the first and second epidemics, and sixteen between the second and third, with irregular intervals between individual cases. In all epidemics the largest number were attacked in April, the time for hot and dusty wind storms. Eleven hundred persons were employed indoors where they were comparatively free from dust; 700 outside, at a dusty work. Of the 47 cases of the disease 44 were in persons engaged in dusty occupations, *e. g.*, grain husking, or other outdoor labor where they were exposed to dust storms; only 3 were among the 1,100 indoors. During the rainy season only 7 cases occurred, and these were in persons exposed to dust in cleaning grain, etc. No direct source of infection could be proven. There had been no case of cerebrospinal meningitis in the jail for four years before the first of those reported, none were known by other physicians to be in the vicinity, and the first patient had been in the jail for one year when taken ill. The first cases in subsequent outbreaks had been confined at least six weeks. The cases occurred in nearly all the wards. There was no evidence of direct contagion as the attendants were not attacked but the wards were slightly overcrowded.

These observations can hardly be held to prove the writer's point, the influence of dust as a vehicle for the diplococcus intracellularis, although they are extremely suggestive. If the dust out-of-doors was responsible, it seems strange that other natives in the vicinity were not affected, and the author distinctly states that no cases were known to exist among them. It is also noteworthy that during the recent campaigns in Northern China where dust storms were unusually severe, meningitis was very exceptional. Buchanan suggests that the germs may have remained in the dust collected on the roofs of the older wards. Some have found the diplococcus intracellularis alive after desiccation for ninety days; but Councilman, Mallory, and Wright noted that when dried on paper and kept at the room temperature in the dark, these bacteria were dead after from seventy-two to ninety-six hours. Although Buchanan's observations are not conclusive, the idea seems worthy of further investigation in view of the apparently strong evidence furnished by his cases.

## ECHOES AND NEWS.

## NEW YORK.

**Gift to St. Vincent's Hospital.**—By the will of the late Mrs. Matilda B. Brown, St. Vincent's Hospital is to receive \$2,500.

**New Building for the Babies' Hospital.**—Plans were filed last Wednesday for the seven and eight-story brick hospital building to be erected at the northeast corner of Lexington Avenue and Fifty-fifth Street for the Babies' Hospital of New York. The building will be 80 by 40.5 feet and will replace those on the same site now owned by the hospital. It is to cost \$90,000.

**Jury Exonerates Physicians.**—The trial of the action of Lucy V. Kellen against Dr. Morris Manges and Dr. Julius Rosenberg, which has been pending in the Supreme Court for the last nine days, resulted last week in a verdict in favor of the defendants. Miss Kellen charged that the physicians operated upon her without her consent, that the operation was unskillful and that they abandoned her after the operation.

**The Smallpox Situation in Manhattan.**—According to Dr. Dillingham, smallpox is increasing in Manhattan, and may not be stamped out for a year. These epidemics go in cycles. The last heavy outbreak of smallpox was in 1874-5; in 1875 there were 3,397 cases in Manhattan alone, out of a population of 483,788. Now with a population of more than 3,500,000 there were about 700 cases from December 28th to May 10th. May and June showed large increases—457 and 362, respectively, or more than for the preceding five or six months. Hot weather has no effect, directly, on smallpox; only vaccination represses it. There are from 500,000 to 1,000,000 persons in New York City who have neglected this precaution, and until vaccination is more general people might as well make up their minds to endure the scourge.

**Summer Health Inspection.**—Seventy-five physicians in the employ of the Health Department will begin, on Monday, a systematic, thorough visitation of the tenement-houses in all five boroughs. Ordinarily only fifty are employed in this work, and a start is not made before the middle of July, but the recent excessive heat caused a setting forward of the date. Practically all the tenements are in Manhattan and Brooklyn; those on the East Side will receive the closest attention. The physicians' duties are many and varied. Their mission is to look after any who may be sick and unable to afford a private physician; to advise mothers ignorant of proper methods of caring for children; to abate nuisances, or report them to the proper offices; to distribute tickets for outings given by St. John's Guild, and give away free ice tickets when needed.

**New Maternity Hospital Incorporated.**—The Manhattan Maternity Hospital and Dispen-

sary has been incorporated to establish and maintain in New York City a maternity hospital, to provide hospital accommodations for women and children, to supply medical attendance for poor women at their own homes, and to maintain a training school for nurses. The directors are Daniel S. Lamont, Cornelius Vanderbilt, Percy R. Payne, Frank L. Polk, Moses Taylor, Harry S. Thompson and William Thorne.

**Physicians and Collecting Agency.**—A number of Brooklyn physicians sued by a collection agency which they had employed gained a verdict in the Second District Municipal Court, it being decided that a clause they had overlooked in the contract, binding them to pay a forfeit of \$25 if they did not turn in the names of thirty debtors within a month, was against public policy.

**Typhoid Fever in Brooklyn.**—Health reports show that at present typhoid fever is at the low water mark in Brooklyn. Four cases were reported last week. This is a much smaller number than was reported during the corresponding weeks of previous years.

**Deaths from Heat Prostration in Brooklyn.**—The number of daily deaths from heat prostration during the recent elevation of temperature were 257 out of a total mortality of 930. While these figures undoubtedly include many cases in which other causes were largely contributory, they may be taken as a fair index of the part played by the heat in the greatly increased mortality.

**Summer Corps Appointments for Brooklyn.**—The following physicians have been appointed by the Health Board of New York to do summer corps work in Brooklyn: Drs. Timothy J. Regan, John A. Shields, James S. Slavin, Edward J. Megaw, Wm. McAnerny, John F. Kent, Christopher D. Kevin, Traverse R. Maxfield, Wm. E. Sullivan, James J. Bowen, Peter J. Curren, E. Rodney Fiske, Charles Ermentrout, John H. O'Neil, John H. Rob, H. P. Peck, Cornelia A. McConville, Novella G. Le Grand, Edson S. Chick. The term of service is two months, the salary being \$100 per month. In addition to the regular duties attendant upon the position, they will be assigned to vaccination work as conditions may require.

**Free Distribution of Pasteurized Modified Milk for Brooklyn.**—The Brooklyn Children's Aid Society, working in co-operation with the Department of Health, began on July 6th the free distribution of Pasteurized modified milk. This milk is intended for sick children between the ages of two and four years and primarily for those suffering from summer diarrheal diseases. Two modifications are made, one being a lime-water and the other a barley-water mixture. These are prepared at the laboratory operated by the Department of Health and distributed from ten stations under the direction of the Aid Society. The distribution will continue until about September 6th and is in line with similar work



that has been carried on in Brooklyn during the past seven summers.

**Smallpox in Brooklyn.**—Since the advent of the heated term the number of new cases of smallpox occurring weekly in Brooklyn has shown considerable diminution. During the week ending July 6th there were reported and confirmed eight cases as against 38 cases for the week ending June 30th. The disease is evenly distributed throughout the city, nearly all sections being affected. The outlook, however, for the stamping out of the disease in the near future is encouraging.

#### PHILADELPHIA.

**State Asylum to Be Enlarged.**—At a recent meeting of the trustees of the State Hospital for the Insane at Norristown, Pa., arrangements were made for the expenditure of the \$128,000 recently appropriated by the Legislature. Two buildings will be erected for the nurses at a cost of \$100,000. At present the 300 nurses share quarters with the patients. It is reported that because of the overcrowded condition, 200 patients in each department are compelled to sleep on the floor. An infirmary for tuberculous patients will be built at a cost of \$5,000. The remaining \$2,300 will be used to complete other improvements. In the male department during the past month there were 15 deaths and 33 admissions; in the female department, 6 deaths and 29 admissions.

**Mercy Hospital (Pittsburg).**—Plans are in preparation for the addition of a surgical and medical ward building to cost \$80,000. In addition to this, it is hoped to add a woman's hospital department, the estimated cost of which is \$320,000 for the building alone. The preliminary work of the new ward addition will begin in a few days and part of the ground for the site of the woman's hospital has been secured.

**Tetanus Following Vaccination.**—A verdict of traumatic tetanus following vaccination was recently returned by a jury under Coroner Dugan concerning Maria McGinley, aged six years, whose death was ascribed by the parents to vaccine virus. Dr. David E. Henry, vaccine physician, who vaccinated the child produced samples of the points and said that out of 12,000 cases no bad results were obtained. The autopsy showed injury that might come from other causes than vaccination. On account of the lapse of time between the vaccination and the illness the Coroner's physician believes the virus was not at fault.

**Criminal Malpractice.**—Mrs. Catharine Bray was recently committed to await the action of the Grand Jury on the charge of causing the death of Mrs. Jennie Johnson. The autopsy showed that blood poisoning, due to a criminal operation, was the cause of death and the jury so found.

**Public Baths.**—Nearly half a million persons sought relief from the heat last week by resort-

ing to the public baths. They were patronized by 117,452 men, 1,474 women, 331,235 boys and 6,567 girls.

**An Emergency Hospital.**—A hospital for the treatment of heat cases has been fitted up by Gimbel Brothers in the old Girard Hotel. They have furnished everything that will be needed by the city Medical Emergency Corps, which will have charge of the station. Soon after the doors were opened on July 4th five patients were brought from Independence Square, where the Chinese Minister was delivering the Independence Day oration.

**Pittsburg Charity Hospital.**—Property was recently purchased in East End, Pittsburg, at a cost of \$100,000 for the erection of a new Charity Hospital. The deed will be given in October and the contract for building will then be let. The plans call for a five-story brick and stone building, 300x150 feet. It will contain about 500 rooms and will be one of the most complete and thoroughly equipped hospitals in the State. It will cost \$500,000.

**Effects of the Recent Extreme Heat.**—The great number of prostrations and deaths due to the extreme heat of the last week has been a matter of daily news. The capacity of all the hospitals in the thickly populated portions of the city was overtaxed in caring for the sufferers. Aid was rendered by the Emergency Corps, by the police department, and by private individuals and firms, who, in some instances, furnished automobiles as ambulances to supplement or replace exhausted horses. The Pennsylvania and Episcopal Hospitals had their usual tents erected, and at some other institutions small tents were also put up. Systematic examinations of the blood are being made at short intervals in cases of both heat exhaustion and thermic fever to determine the condition present. Intravenous infusion of saline solution has been used in a number of cases with gratifying results. It was generally preceded by bleeding. In one hospital many of the cases of thermic fever were bled as soon as they were received, the patient being rubbed with ice meanwhile, and afterward put into the bath.

#### CHICAGO.

**Hysterical Amblyopia.**—At a recent joint meeting of the Chicago Ophthalmological and Neurological Societies, Dr. W. H. Peck reported four interesting cases of hysterical amblyopia. These cases presented many of the features of the disease. The patients had the characteristic concentric contraction of the fields of vision, also reversal of the color fields, spasm of accommodation, and blepharospasm; also absence of any demonstrable lesion of the fundus, with the ophthalmoscope.

**Mydriasis.**—Dr. Wm. H. Wilder reported a case of persistent mydriasis after the use of homatropine. Dr. C. P. Pinkard reported a similar case, which he saw many years ago in the

Boston Infirmary. The patient was a girl with an error of refraction, and homatropine was used. The pupils had not returned to their normal condition at the end of a week, and she was given pilocarpine to use, with instructions to return daily. She was finally admitted to the Infirmary, when eserine and pilocarpine were used for about a month. The patient then attended the out-patient clinic during the rest of his stay there, which was about eight months, so that she was under constant observation for about ten months. When he left the pupils were still dilated, with complete paralysis of accommodation. He thought the condition was due to hysteria. Dr. Casey A. Wood stated that, having had occasion to use homatropine, he looked up the literature and found half a dozen cases similar to the one reported by Dr. Wildner. He thought there was something more than hysteria connected with these cases, and that, perhaps, an organic element followed the use of homatropine. Cases of dilated pupils are not so frequently seen after the use of duboisine, atropine, etc., as after the employment of homatropine, but why he did not know.

**Probable Tumor of the Pituitary Body.**—Dr. Daniel R. Brower presented a patient for diagnosis. The boy was five years of age and weighed eighty-five pounds. He first came under the speaker's observation two months ago at the County Hospital, at which time he weighed ninety-two pounds. At a subsequent examination, made about a month ago, the boy weighed eighty pounds. He presented some comparative measurements and said that according to Dr. Christopher, who had done some original work along this line, the weight of a normal child of the same age was forty pounds, while this boy weighed over ninety pounds when first seen. The height of a normal child was forty-one inches, while that of this boy was forty-seven inches. Other comparative measurements were given of different parts of the body. He did not think the case was solely one of excess of fat. His attention was first attracted to the child by a marked vertical nystagmus. Dr. Hotz examined the boy two years ago and found atrophy of the optic nerve, with restricted vision and nystagmus. The atrophy must have been either congenital or developed from a central lesion. The field of vision is so contracted in the right eye as to be almost absolutely lost. There is likewise a little atrophy in the left eye. There is loss of both patellar tendon reflexes. Dr. Brower thought the case might prove to be one of tumor of the pineal glands or of the pituitary body. In the last number of Gould's Year-Book a somewhat similar case is reported, in which a diagnosis was made of tumor of the pituitary body, and at the postmortem examination it was found to be a tumor of the pineal glands. During infancy the boy was only the size of an ordinary child. The excessive growth began when he was three years of age and continued rapidly until seen by the speaker, at which time desic-

cated thyroid was administered. Since giving this agent, the weight of the boy has been reduced to eighty-five pounds.

**Two Cases of Locomotor Ataxia.**—Dr. Archibald Church presented two cases of this disease in males, and discussed briefly the Fraenkel method of exercises as a valuable adjunct in the treatment. In the discussion, Dr. Wood spoke of the involvement of the ear in tabes. He added a word or two of hopefulness regarding certain eye symptoms in tabes.

**Diagnosis of Locomotor Ataxia.**—Dr. H. B. Young of Burlington, Iowa, narrates two cases in connection with the diagnosis of tabes. He considers unreliable a diagnosis of locomotor ataxia based upon optic nerve atrophy and absence of knee-jerks, if no other manifestations are present. Something more is required and, while the profession is looking for it, he urged adherence to the teachings of Schmeichler.

#### GENERAL

**Resurrection of "Vratch."**—This able Russian medical journal is to continue under a new title in pursuance to the wishes of the late editor, Dr. Manassein. It is to be called the "Russian Doctor" instead of "Doctor." Dr. W. Podwysotsky, professor of Pathology at Odessa, is the new editor.

**Physician, Not Horse Doctor.**—A physician and surgeon has not the right to practise as a veterinarian. Such is the decision given by Judge W. G. Cochran in a case in the Douglas County Circuit Court, in which Dr. Barbour has sued Mell Crews for medical attention given to Crews' racer, A. J. Glick, which was injured while racing at Dubuque, Iowa. Barbour presented a bill for \$258 and Crews contended that this amount was excessive, but paid \$100. Barbour sued for the remaining \$158, but lost the suit, as the Judge decided he had no right to practise as a horse doctor.

**University of California.**—A chair of anatomy has been established at the State University of California and Dr. Joseph Marshall Flint, instructor in anatomy in the University of Chicago and graduate of Johns Hopkins University has been appointed to the professorship.

**Manila and the Plague.**—The plague situation in Manila remains about the same, and no marked increase in the number of cases has occurred. During the week ended May 25, 1901, there were reported 29 cases—Chinese, 20; Filipinos, 9—with 25 deaths. During the same period 8 cases of smallpox and 175 deaths from all causes were reported. One other new case of plague has occurred in Cavite, making a total of 2, with fatal results in both. Another case has also occurred in Santa Rosa.

**Obituary.**—Dr. Henry C. C. Maisch, of Philadelphia, died July 1st, aged thirty-eight years. After completing his education in Germany, Dr. Maisch was connected with Clark University, Worcester, Mass.; later he held a profes-



sorship in the Illinois College of Pharmacy in Chicago. For two years he was professor of materia medica and botany at the Medico-Chirurgical College, but resigned last year.

Dr. Martin H. Williams of Philadelphia died June 30th, aged thirty-nine years. For many years he was connected with Jefferson Medical College and Hospital in various capacities.

## CORRESPONDENCE

### THE "HAND-STONE" IN SURGERY.

To the Editor of the MEDICAL NEWS:

DEAR SIR: In the great electric furnaces at Niagara is now manufactured a new product of synthetic chemistry, by aid of intensest heat; it is called by its discoverer carborundum. It is composed of tiny purple crystals hard enough to scratch sapphires, almost as hard as diamonds and even more indestructible. To produce it carbon is made to combine with silicon, using for the purpose coke and white sand, and at a heat of about 7,000° F., produced under the intensity of a current of 7,500 amperes, continued for some thirty-six hours.

This substance, carborundum, is finding an immense field of usefulness in various ways, but it is only recently that it has occurred to any one to apply it to the surgeon's needs.

The *bête noire* of the surgeon has been, is, and is likely to be, the skin. How to cleanse this, how best to free it from its microbic population with the least irritation, is continually being discussed, and the advent of rubber gloves has not lessened the interest; for though these have in my judgment come to stay, and those who oppose their use in ordinary aseptic operations are steadily lessening in number and influence, we must as carefully sterilize our hands now as before their coming, for at any moment a finger may be torn or pricked, exposing the wound to instant infection, otherwise.

I do not think the ideal method of sterilizing either our own skin or that of the patient has as yet been reached. The various chemicals used thus far are one and all irritant to most skins, or else are too slow in action to be considered ideal. However, my object is not at present to discuss them. One thing is certain; mechanical cleansing—while not in itself enough—is certainly the chief thing; and sufficient hot soap and water with friction of the right sort, for a reasonably long time, will go a long way toward the goal of absolute cleanliness in a surgical sense.

Heretofore, brushes have been considered as almost essential, although it has long been known that, in some regions, by the digging quality of the bristles the "submerged tenth," otherwise quiescent and fairly well-behaved microbes, dwelling in the deepest layers of the epidermis, may be stirred into a vigorous nihilistic activity. Still, as an effective loosening and removal of the superficial layers of the epithelium is obligatory and the brush has continued in use.

To-day, due to the ingenuity of Mr. F. A. Reichardt, of New York, we have a substitute for the brush which bids fair to become a favorite with the profession. This he has called the "hand-stone." It is molded from the carborundum crystals just described, first crushed to powder, and then resubjected to intense heat in its present shape. I have tried it sufficiently to be willing to speak confidently of its qualities. One employs it just as one does the brush or the pumice-stone, using an abundance of soap and water; but it has certain advantages over both. It does not dig in an unseemly way like the brush, and it is certainly more effective than pumice-stone, and also stands boiling or steaming perfectly well, of course. In fact, nothing short of dropping it upon a hard surface can injure it or affect it adversely in the least, and years of wear would leave it practically new. Use it gently; hard rubbing is unnecessary with it. The absolute sharpness of the almost microscopically small crushed crystals which compose the "hand-stone" enables the operator to file away, as with a file of extreme fineness, the surface layers of epidermis, down to the depth required, and the silken softness of the feel of the skin thereafter is really in noticeable contrast with the roughened condition often observable when the other means which I have mentioned have been used.

The particular pointed shape given the "hand-stone" is selected by the maker as enabling the user to fit its surface to any depressions or inequalities of the body. As yet, a means of making it reach the extreme angle beneath the finger nails has not seemed practicable, for this would require a very thin edge. But elsewhere it is all that can be desired for its special purpose, and I would suggest that surgeons boil one with their instruments, and then use it with, for instance, a lysol solution, in that final cleansing—or rather re-cleansing—of the patient's skin which we always employ a moment before operating.

ROBERT H. M. DAWBARN.

105 West 74th Street, New York, March 14, 1901.

## OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, June 29, 1901.

THE NATIONAL HOSPITAL FOR THE PARALYZED AND EPILEPTIC—REPORT OF THE COMMITTEE OF INQUIRY—A VICTORY FOR THE MEDICAL STAFF—THE END OF THE "ANCIEN RÉGIME"—ABOLITION OF THE SECRETARY-DIRECTOR—THE TUBERCULOSIS CONGRESS—PROGRAM OF FESTIVITIES—KOCH'S ADDRESS—IS HE GOING TO STARTLE THE WORLD AGAIN?

A FEW weeks ago I gave a short account of a quarrel between the doctors and the lay governors of the National Hospital for the Paralyzed and Epileptic which was convulsing the medical world of London and scandalizing the public. Briefly, the matter in dispute was, Should the medical staff have a voice in the management of



the hospital? Or should they be merely the executive, carrying out the behests of the Board of Management, or rather of an autocratic official entitled the Secretary-Director, concentrating in his own single person the administrative authority which he was supposed to represent? The demand of the medical staff, which includes several men of worldwide reputation, for some share in the government of the institution whose reputation they have made was obstinately and even insolently refused by the Board of Management; and when they made a formal complaint to the whole body of governors about definite instances of mismanagement, such as insufficient quantity and inferior quality of food, deficiencies in the nursing arrangements, etc., the Board appointed some members of their own body to inquire into the charges. Naturally the result of the inquiry was a declaration that all was for the best in all possible hospitals. The medical staff, however, insisted on an impartial inquiry by an independent committee, and at a meeting of the governors on March 23d it was decided that such a committee should be appointed. It was to include "at least one physician or surgeon, one eminent lawyer, one man engaged in commercial or financial pursuits, one man experienced in hospital management, not being a medical man, and one other person, none being members of the Board or Staff." The Committee comprised Sir Edward Fry, a late Judge of the High Court, a distinguished lawyer by no means likely to be biased in favor of the medical profession; Lord Wolverton; Sir W. W. Karslake, a King's Counsel learned in the law, as the official style runs; Mr. Timothy Holmes, formerly Surgeon to St. George's Hospital and a recognized authority on hospital affairs; Mr. Cecil Henry Russell, and Mr. John Danvers—both of them doubtless good men and true, but of whom the present deponent knoweth nothing. The Committee has made a thorough inquiry and its report, of which I have been privileged to see a copy though it has not yet been issued to the press, is a complete vindication of the medical staff, and a crushing condemnation of the system of government or rather misgovernment which has caused the trouble. The Committee recommends that the representation on the Board asked for by the staff should be granted, and what is particularly satisfactory they brush aside with contempt the objections to this concession put forward by the Board. The character of these may be judged from one or two instances. The Board affected a great fear of the evil influence that medical members might exercise by making the scientific element in the hospital predominant; this, they pleaded, would tend to subordinate the immediate benefit of the patients to the pursuit of medical knowledge. In proof of this it was darkly hinted that in the case of one child "the sufferings of the patient had been prolonged in the interest of medical science." The case referred to is understood to be one of microcephaly which some years ago was kept in a considerable time in order that the ef-

fect of linear craniectomy might be fully tried. This charge, at once malicious and foolish, was shown to be without foundation. Then it was insinuated that the religious functions of the Chaplain were made "very secondary to the medical services!" The Committee were able to satisfy themselves that the medical staff never interfered in any way with the spiritual ministrations of the reverend gentleman. There is a note of scorn in the conclusion of the Committee that they can find no foundation for the fears entertained that the character of the hospital as a religious and philanthropic institution would be imperiled by the presence of two medical men on the Board of Management. One cannot help feeling that the dread which the Board professed to feel lest the presence of two doctors should lead to the complete overshadowing of the other members of a Board of twelve is an unconscious testimony to the intellectual superiority of the medical staff.

With regard to the Secretary-Director, the *causa teterrima belli*, the Committee express a decided opinion that there was no place for such a functionary in the machinery of a well-organized hospital; and that, even if there were, Mr. Burford Rawlings was the wrong man to fill it. It was abundantly proved that the Board of Management had practically left the conduct of affairs to him. He was a member of the Finance and House Committees, at the meetings of which one was a quorum, and very often the quorum was the Secretary-Director. He therefore ruled the hospital virtually as a despot, and in his attitude toward the medical staff he "assumed the god" and "seemed to shake the spheres" by his nod. It was shown that he usurped the functions of the medical officers and that instead of limiting himself to the discharge of the duties entrusted to him, he had on many occasions, in the language of the report, "amplified his jurisdiction beyond its legitimate bounds." The Committee recommend the abolition of the office of Secretary-Director, which places in the hands of one man powers that it would require a peculiar combination of qualities (which, the Committee plainly say, is not possessed by Mr. Rawlings) to exercise without abuse.

The practical outcome of the inquiry, therefore, is a victory for the medical staff and a signal defeat for the Board of Management. The Secretary-Director is left, in an official sense, dead on the field of battle. But I understand that the medical staff will not be satisfied with this. They thirst—of course, "tropically," as Hamlet says—for the blood of the Board of Management. They wish to make a clean sweep of their enemies, and to enter on a new era of scientific fruitfulness under the Saturnian reign of a more enlightened government.

The underlying cause of the whole trouble was the fact that some of the more influential members of the Board, including the Chairman, are strong antivivisectionists, while some leading members of the staff, like Ferrier and Horsley, have

won distinction by experimental research. This is the explanation of the attempts of the Board to make people believe that if the medical staff had a voice in the management of the hospital it would become more a laboratory than a place for the treatment of disease.

The Committee of Inquiry appear to contemplate a complete change of government; for in their Report they distinctly state that the Secretary-Director only acted in the spirit of the instructions which he received from the Board of Management, and that on them, therefore, rather than on him rests the responsibility for his misdeeds. It is satisfactory that the National Hospital, of which we are very proud here, is not to fall from its high estate and become a happy hunting-ground for the humanitarian faddist.

The prospects of the forthcoming Congress on Tuberculosis grow brighter as the time of meeting draws nearer. Some 1,200 adhesions have been received up to the present, and they continue to come in daily, so that there can be little doubt that the number will exceed 2,000. Money also flows in a steady stream; the Treasurer has now \$23,000 in hand and he expects the figure to rise a good deal higher. The Congress is to be opened on Monday, July 22d, by the Duke of Cambridge, as representing the King. The Duke of Connaught will be prevented by his military duties from performing that duty as had been arranged. In addition to the customary banquet, there will be receptions by various great officers of the Congress, by the Lord Mayor, by the Earl and Countess of Derby and others. A river party is to be given by Sir John Whittaker Ellis, a former Lord Mayor of London; a garden party by the Duke and Duchess of Northumberland; and one by the Ladies' Reception Committee in the beautiful gardens of the Royal Botanic Society, Regent's Park.

I have already sent you the most important features of the scientific programme, and have only to add that Lord Lister will take the chair when Koch delivers his address on Tuesday, July 23d. The address will deal with the prevention of tuberculosis considered on the analogy of other infective diseases such as smallpox, cholera, plague, hydrophobia, rinderpest, malaria and leprosy, which can be to a certain extent successfully prevented. The principal question which Koch will discuss is whether what has been done up to the present for the prevention of tuberculosis and what is likely to be done in the near future correspond to the etiological conditions of the disease; and how far steps should be taken toward the adoption of more thorough methods of treatment. It may be said of Koch, as it was said of Dupuytren, that his motto might be "*Faire autrement*." He has, as far as so godlike a man can share in human weakness, the instinct of sensationalism; and from the somewhat mysterious foreshadowing of the lines of his address which he has communicated to the officials, one may gather that he intends to say something that will startle the Congress. After all, I hear

Madame will not accompany him, a change of plan which has relieved the minds of some of the organizers by removing the danger of social complications which might have slightly ruffled the perfect smoothness of the proceedings. But nothing short of the sudden death of the King, a French invasion, or a cataclysm of Nature, can now wreck the Congress.

#### TRANSACTIONS OF THE FOREIGN SOCIETIES.

British.

EXUDATES INTO THE VITREOUS—PARALYSIS OF THE THIRD CRANIAL NERVE WITH UNUSUAL COMPLICATIONS—BILATERAL SYMMETRICAL CORNEAL OPACITIES—ERYTHROPSIA—EYE INJURY DUE TO LIGHTNING.

L. BUCHANAN, at the Ophthalmological Society, June 13, 1901, read a paper on the inflammatory exudates into the vitreous chamber of the eye, illustrating his points with lantern slides made from his preparations. He said exudation into the vitreous in cyclitis was primarily formed in the pars ciliaris retinae and more especially in the non-folded portion of it, but soon the fibrous stroma of the ciliary body and the retina took part in the production of the inflammatory exudate. The exudate was seen in fresh specimens hardened in 5-per-cent. formalin as white flocculent masses. It might be divided into zones, which from the ciliary body inward are as follows: (1) Fibrous zone; (2) fibrinous zone; (3) fibrinocellular zone. The formation of fibrous tissue usually begins early, possibly as early as the eighth day. Its origin appears to be some action of certain oval nuclei on the fibrin which then rapidly becomes fibrous tissue. The cells which formed the exudate at first formed masses on the non-pigmented parts of the pars ciliaris retinae and could assume various characters. That all these cells are not derived from the endothelium is shown by bleaching and re-staining, when many cells could be seen migrating from the deeper to the more superficial layers. In the retina were also found similar evidence of migration. The cells thus exuded to the surface passed to a greater or lesser depth into the vitreous chamber where it could be seen that degeneration to different degrees had taken place, the nuclei often disappeared, but no evidences of mitosis could be made out. Fatty degeneration and later a further migration of nuclei occurred, which finally found their way back into the lymphatics. A fibrinous cyclitic membrane was thus left very fatty and highly vascular. The fat was absorbed and the vessels gradually constricted, so that finally an avascular fibrous tissue layer was left which gradually contracted and distorted and deformed the eye and then destroyed it. The last stage was the formation of true bone. Spherical globules were formed which grew, forming a solid mass penetrated by blood-vessels and finally became converted into bone. These bone corpuscles were probably fibrous tissue corpuscles. The



bone contained cavities lined with osteoblasts, blood-vessels, fat and fatty-acid crystals.

P. H. MULES recounted a case of paralysis of the third cranial nerve with unusual complications. The patient was a seventy-five-year-old man, who for several days had been feeling ill and proceeded to doctor himself by the following original and energetic plan. He took half a box of wind pills and feeling no better added a variety of others. He then took two ounces of tartar-emetic solution which provoked a two-day vomiting. When the vomiting had ceased, he proceeded to use on the forehead and scalp of his aching head various applications which are used chiefly for veterinary purposes. As he still continued to grow worse, Mr. Mules was called in. The edematous scalp was incised and ten grains of calomel given. The next day the patient was better, although sloughs covered the scalp and there was severe pain. It was then noted that there was paralysis of the third nerve. Seventeen days later the scalp had healed entirely, but the paralysis remained. The cause of all the trouble seemed to be a herpes of the fifth nerve. This was the cause of the patient feeling ill in the first place. The vesicles had never been seen, because the applications had caused so widespread destruction of the tissue. As a sequel the paralysis of the third nerve appeared.

P. H. MULES also reported a case of double symmetrical corneal opacity of eight years' standing. The apices of the lesions were at the pupil and the bases at the corneal margin. Their growth had been very slow and there was a vertical slit in each at about the pupil. One was scraped and the other cut away with a thin knife. The functional results had been very good. G. A. Critchell in the discussion stated that for seven years he had cared for a similar case in which the opacity began at the periphery. At the present time the pupils had still escaped, therefore he had not done any operation.

W. H. R. RIVERS described a form of erythroptosis which appeared as a bright red border around a white object after strong illumination of the eye. This phenomenon might be regarded as a link intermediate between the ordinary forms of erythroptosis and the transient red border seen about a white object and described by Sheldford Bidwell. It was shown that this erythroptosis of Bidwell, the artificial erythroptosis of Fuchs and clinical erythroptosis, such as occurs after removal of the lens, are closely related. The causes of all erythroptosis were then considered and on the whole were shown to be due to coloration by the light stimulating the retina with blood. Such might be produced in several ways: (1) By transmission through the sclerotic; (2) by internal reflection from the eyeballs; (3) by transmission through the anterior layers of the retina. The experiments of Birckhoff show that erythroptosis may occur when light is prevented from passing through the anterior periphery of the eye; but this does not exclude the third source of redness above mentioned.

M. T. YARR gave the history of two cases of injury to the eye due to lightning in South Africa. While encamped in the Orange Colony in March, 1900, they were exposed to a violent thunder storm. Major H.'s tent-pole was struck and at the same time he felt a tingling down the right side of his face and right arm. He became partially unconscious, but soon recovered; the tingling persisted for some days. Four months later he discovered that he was practically blind in the right eye and he was invalided to the base hospital. There were several large hemorrhages and patches of atrophy in the retina between the superior and inferior temporal veins, with a few scattered and much smaller hemorrhages in the periphery, some engorgement of the veins, pallor of the disc and contraction of the arteries. The left eye was normal. R. C., private, employed on telephone duty at Belfast, Transvaal. In October, 1900, his instrument was struck by lightning while he was sitting at his operating-table. He fell and could not see when he regained his senses. He suffered no bodily injury, but his instrument was bent. The next day he could distinguish light and darkness, and later count figures with the left eye. There was an extensive detachment of the retina in the right eye, running in wavy white lines inferiorly. The left eye showed a detachment spread over a wider area. The vision had been previously normal.

## SOCIETY PROCEEDINGS.

### AMERICAN MEDICAL ASSOCIATION.

*Fifty-Second Annual Meeting, Held at St. Paul, Minn., June 4-7, 1901.*

#### SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

FIRST DAY—JUNE 4TH.

**Address of the Chairman.**—Dr. Henry P. Newman of Chicago, in reviewing the advances in obstetrics and gynecology during the past year, accorded spinal cocainization first consideration. The consensus of opinion is that it is not applicable to children nor to major pelvic operations in sensitive women. The appearance of a patient during such major operation closely resembles one in a condition of shock. There have been six deaths recorded against the procedure. It is unreliable in obstetrics, because it cannot be timed to exert its good effect when most needed. There is no relaxation of muscular tissue while the patient is under its influence, and as that is necessary for the performance of most obstetric and gynecological operations, its field of usefulness is very much limited. In reviewing the cancer parasitic theory, one is struck by the large amount of work done in this field by American observers. At present, the only means of preventing uterine cancer is by removing all



abraded surfaces in the cancer bearing areas. In these cases the organs should be removed by the vaginal route. Ovarian transplantation has become a fixed operation and the honor of introducing it is due to Morris of New York. It is definitely settled that the ovaries can be transplanted anywhere in the pelvic peritoneum and still functionate.

**Accidents and Complications of Pelvic Surgery.**—Dr. John B. Deaver of Philadelphia, said post-operative adhesions are the most troublesome conditions that the surgeon is called upon to treat. The lower sigmoid offers the greatest perils, and this portion of the bowel is frequently torn. This is due to the immobility of the bowel at this point. Where the omentum is adherent it should be divided between ligatures. If a cyst or innocent tumor is adherent and inseparable from bladder or bowel it is advisable to remove as much as possible and to sear the remainder with the cautery. Collections of pus in the pelvis should be operated upon from above. It is impossible to deal with adhesions when the operation is done from below. Every woman who has borne children has a laceration of the cervix, yet not one in fifty should be repaired, unless in such cases there is a family history of cancer.

Dr. E. M. Ricketts of Cincinnati, said that in puerperal infection the pus should be evacuated by vaginal puncture or incision.

**Post-operative Intraperitoneal Hemorrhage.**—In this paper Dr. A. H. Cordier of Kansas City, Mo., said the most frequent cause of post-operative hemorrhage is the slipping of the ligatures. Catgut is an unstable ligature on large pedicles, because it is very apt to slip and when rapidly absorbed may allow fatal hemorrhage. In the only case in which the author employed it, fatal post-operative hemorrhage resulted. Silk is the best ligature for abdominal work. The tendency to post-operative bleeding is much increased by the use of the Trendelenburg position, because when the patient is lowered to the horizontal posture blood-pressure is increased and many vessels are reopened. The symptoms of hemorrhage and shock are the same. If the patient leaves the operating-table in good condition and within an hour or so shows symptoms referable to either of these conditions, it is better to open a suture, insert a pair of artery forceps and see if there is any bleeding. In all doubtful cases, where the wound is oozing, it is better to insert a rubber tube for twelve hours after the operation.

Dr. Howard A. Kelly of Baltimore said that he uses fine silk for ligatures and, provided everything be sterile, there is no trouble from the ligature. He had seen a fatal post-operative hemorrhage occur eight days after operation, which on autopsy was shown to have been due to absorbing of the catgut ligature. It is his custom to employ two ligatures on

every large vessel. Careful inspection of the field after the operation should be made. If there is any doubt as to whether or not bleeding is going on it is better to open and see. The vessels should be caught first by a finger or forceps and clamped, and after that one may clean out the blood from the pelvis. Dr. McMurtry of Louisville does not believe that the ligature material has anything to do with the slipping of the ligature. He clamps the broad ligaments first in order to get rid of tension and then ties the vessels. The simple secondary operation of opening a wound of this kind is very much more serious than the most severe primary operation. Dr. H. O. Marcy of Boston advises that a suture be employed in these abdominal operations in addition to ligature. Kangaroo tendon is the best material. Dr. F. H. Wiggan of New York said that many of the secondary operations that he has been called upon to do were the result of silk ligatures. He uses fine chromicized catgut and has never had them slip. He also sutures. The method of tying is responsible for many failures. A single knot should be tied first and a double knot afterward.

**Elimination of Peritoneal Infection and Prevention of Surgical Peritonitis.**—Dr. J. G. Clark of Philadelphia from an analysis of 1,700 cases and various experiments draws the following conclusions: The peritoneum has an enormous absorbing function, taking up from three to eight per cent. of the entire body weight in one hour. (2) Minute bodies are carried in a short time by mediastinal lymph-glands and vessels into the blood by which they are quickly distributed to abdominal glands and bone-marrow. (3) These granular bodies are first largely carried as free bodies swept by the current, but later leucocytes act as carriers. (4) After the introduction of micro-organisms into the peritoneal cavity, there is a great decrease in their number within the first hour, both by intraperitoneal destruction and by rapid absorption into the general circulation, where they are dealt with. (5) Therefore there is no possibility of limiting free infectious matter to any part of the peritoneal cavity by mechanical means. (6) Vigorous streptococci which remain behind develop within six hours a repellent quality for leucocytes and the lethal combat is therefore well under way before drainage, as ordinarily employed, can possibly have any beneficial action. (7) A moderate number of even virulent organisms carried by blood to the lungs, etc., may be eliminated without the least harm to the patient, whereas if the same amount of infection is retained it would generate others and overwhelm the patient. (8) In most cases drainage is useless. (9) The patient is greatly stimulated by the intra-peritoneal use of the decinormal salt solution and is better able to resist infection.

Dr. Kelly of Baltimore said that he never

uses drainage in abdominal work, except in general peritonitis due to appendicitis. At times gauze is used to sequester cavities, but is generally removed within twenty-four hours. Dr. Wiggin believes that the saline solution prevents adhesions between the intestines. He has used this method for nine years with the happiest results.

**A New Method for Extirpation of Cancer of the Rectum.**—Dr. M. D. Mann of Buffalo, N. Y., read a paper on this subject. For growths too high to be reached by vagina or rectum the following procedure had been successfully applied in three cases. The patient is placed in the Trendelenburg position and an abdominal incision made; the rectum is then clamped just above the growth, pulled out of the way, the growth removed and a Murphy button used as a means of anastomosis. Excellent union was obtained. Dr. J. W. Bovée of Washington suggested that the uterus be removed in these cases, thus affording more room.

#### SECOND DAY—JUNE 6TH.

**Atresia Hymenalis.**—Dr. O. Thienhaus of Milwaukee showed a specimen of this condition and said that the presence of hematosalpinx in it proves that this atresia is of inflammatory origin. Any of the infectious diseases may cause it. Gonorrhea in the infant often affects the vagina and is the commonest cause of atresia. If a hematosalpinx is present it must be removed by abdominal section. Simple vaginal incision is fatal in 70 per cent. of the cases. This is due to the sepsis that almost invariably as follows.

**Immediate and Remote Result of Conservative Surgery.**—Dr. A. Goldspohn of Chicago read this paper. He said that in a series of 97 cases of follicular and cystic degeneration of the ovary treated by excision and ignipuncture, ten pregnancies occurred. Satisfactory results as far as the symptoms were concerned were obtained in but one-half of those treated per vagina. In all of the cases done from above the results were perfect two years after operation. The method by inguinal incision is preferable in those cases that do not have extensive adhesions. In all patients not near the menopause and free from dyscrasia, some part of the ovary should be preserved. Asepsis is a *sine qua non* to success. Fine absorbable material should be employed as a suture. The incision should be large and preferably done through the abdominal wall.

Dr. Bovée stated that if the ovary is extensively diseased it should be removed entirely. It is safer to remove the entire tube than a part of the same. The cases treated by excision or puncture are generally troubled later by the adhesions that form in these places. A premature menopause is not as troublesome as the stormy menstruation that occurs in these cases.

**Electrothermic Hemostasis.**—Dr. A. J. Downes of Philadelphia in a paper with this title, considers hemostasis by electricity the ideal method in abdominal surgery, especially in appendectomy. The instruments devised by the author for this purpose consist of an angiotribe and hemostatic forceps, provided with an iridoplatinum strip in the jaws, and connected with a storage battery. In a series of cases examined postmortem, no trace of vessels could be found in the stump.

**How Shall We deal with Uterine Myomata?** Dr. E. E. Montgomery of Philadelphia believes that thyroid extract exerts a special influence on the epithelium of the uterus. It stops bleeding and relieves pain both in normal and carcinomatous uteri. Large doses are required and these are rarely well borne. Fibroids ordinarily should be removed by enucleation. Submucous fibroids can be removed by vagina after dilating or splitting the cervix. It is seldom necessary to remove the uterus.

**Carcinoma of the Cervix Uteri.**—Dr. J. M. Baldy of Philadelphia in his paper upon this subject said that according to the surgery of the present day cancer of the cervix is practically incurable. If we analyze all statistics, counting all our cases, less than five per cent. have been reported as cured. In the past there has been too much stress laid upon microscopic findings and too little upon clinical experience. Hemorrhage and progressive loss of flesh and strength are the earliest symptoms and they are always present. Any show of blood appearing after one year after the menopause, with no history of injury, has in his experience almost invariably been due to cancer. A few drops of blood after coition or constipation, or any slight exertion in any woman, calls for an examination. It is extremely rare to find any other cause except cancer.

Dr. Wiggin said that if a case is seen within six months from its inception, there is a good chance of recovery by surgical means. We should not wait too long for the report of the pathologist, if the clinical symptoms are marked, because in some cases within a few days the case is beyond recovery. Dr. E. Reis of Chicago described his method of extirpating the uterus and appendages together with all the glands in the pelvis and stated that, although his primary mortality is 20 per cent. there has been no recurrences in any of his cases. The operation is not as difficult as might be expected.

**Ovarian Surgery.**—A paper on this subject was presented by Dr. A. Palmer Dudley of New York. It is very rare that total ablation of uterus and appendages is necessary in pelvic diseases. Out of 190 cases of conservative operation there had been no failures, and the women are perfectly well to-day. Conservative surgery is only suitable for young persons during the child-bearing period and those in good circumstances who can afford to rest for



some months after the operation. Out of 128 of these cases that have been followed 28 pregnancies have occurred. He has performed intra-uterine implantation of the ovary six times. One of the horns of the uterus is split and the ovarian graft, still attached to its own ligaments, is suspended in the uterine cavity and stitched to the mucous membrane. In this way it is nourished by its own vessel and also by the mucous membrane of the uterus. The patient menstruates and thus the evils of the artificial menopause are mitigated. Dr. J. Riddle Goffe of New York said that he has done the conservative operation a hundred times and in eleven instances pregnancy has followed in women that were previously sterile. He advised that the operation be done through the vagina.

**Incisions Appropriate to Different Renal Operations.**—Dr. Kelly said that the ordinary incision for approaching a kidney posteriorly cuts across some of the nerve trunks and thus often causes an area of anesthesia over the hip. By anatomical demonstration it was shown that an incision over the superior oblique triangle, beginning over the last rib, running down obliquely along the erector spinæ, and carried only through the skin and fascia was most advantageous. The fascia is then incised and the fatty capsule of the kidney gradually pulled out piece by piece. In this way the kidney is not injured. If the kidney is diseased and it is necessary to remove it, the incision should be made lower down, reaching to the crest of the ilium. The fascia should be cut and the muscles separated exactly in the same manner as in the McBurney incision for appendicitis.

### THIRD DAY—JUNE 7TH.

**Surgical Treatment of Retroversion of the Uterus.**—Dr. Franklin B. Martin of Chicago presented this paper. After having tried various modifications of the ordinary Alexander operation, the author concludes that none of them secure perfect results. Hence, the following operation was devised: In cases of simple retroversion without adhesions the ordinary incisions are made as in the Alexander operation. A forceps is then passed from one side under the skin and fascia to the opening on the other side. The ligament is now grasped in the jaws of the forceps and brought through to the opposite side. The two ligaments are then tied in a knot and this knot is pushed under the skin and superficial fascia. Sixty-one cases have been done by this method with perfect results during the past five years. Among these cases six pregnancies have since occurred without any evil results. By this method uniform shortening of the ligaments is secured, and permanent and strong fixation is insured.

**Retrodisplacement of the Uterus.**—Dr. Emil

Ries of Chicago read a paper on this subject. The vaginal route is superior (1) because it exposes a limited area; (2) the shock and danger of infection are much less; (3) it requires less handling of the intestine and less adhesion results; (4) there is no visible scar; (5) there is no ventral hernia; (6) the time of detention in bed is less and the after-treatment very simple. Vaginal fixation as ordinarily employed is a failure, because, if the uterus is fixed too close to the anterior vaginal wall, there will be trouble if pregnancy should follow. On the other hand, if loosely attached, a return of the displacement is very common. With other methods of shortening the round ligaments, the uterus is held by unstable adhesions and kinking of the Fallopian tube is quite common. In the author's method the ordinary anterior vaginal incision is made, the uterus and appendages are brought out, the round ligament is next detached from its peritoneal covering by a blunt dissection, a catgut ligature is then attached to each ligament about one inch from its insertion into the uterus. On the anterior surface of the uterus on a level with the tubes a tunnel one inch long is made through the uterine tissue by means of artery forceps. A round ligament on one side is pulled through this tunnel by means of the catgut ligature attached to it. The same thing is done on the opposite side. The ligaments thus are made to cross one another in the tunnel. Each of the ends are anchored at the point of exit of the loop from the tunnel on each side. The wound is closed in the usual manner. Within a week the patient leaves the hospital. Perfect results have been found in all the cases examined one year after the operation.

Dr. Goffe of New York said in discussion that the uterosacral and uterovesical ligaments are the main supports of the uterus. If the cervix could be brought well up in the hollow of the sacrum by shortening the uterosacral ligament, we would have the ideal method. This is impracticable at present. In his own operation he makes a vaginal incision, sutures a loop in the round ligament and fastens the loop to the anterior surface of the uterus. If silk is used as a suture, failure is not likely. Dr. W. H. Humiston of Cleveland believes that in a simple retroversion, by a thorough curetting and the use of a suitable pessary for eight or ten weeks, one can cure most of these cases. Dr. Kelly has had relapses in but 2 per cent. in 600 cases of abdominal fixation done by the method described by him. Forty-three patients became pregnant out of a series of 214. There was no trouble during labor in any of them.

**Position of Patient During Delivery.**—This paper was read by Dr. W. D. Porter of Cincinnati, O. In the ordinary method of delivery, with the patient on her back, fecal matter often enters the vagina and is a frequent cause of



septic infection. The author prevents this in the following manner: The patient is laid across the bed with her hips well down to the edge with her legs extended; two assistants are employed to hold the legs, but in some cases the backs of two chairs may be utilized. The operator sits in front between the legs and is thus able to control the head and perineum perfectly because the patient cannot change her position.

**Obstetrics as It Is and as It Should Be.**—Dr. E. Gustave Zinke of Cincinnati said we should encourage the confinement of all women, no matter what their circumstances may be, in maternity hospitals, because no one can be prepared for all emergencies in a private house. The patient should be delivered by the family practitioner. It saves the physician's time and also offers greater protection for the patient than at present.

**Puerperal Sepsis.**—Dr. J. F. Moran of Washington, D. C., in this paper said, that the streptococcus is the commonest cause of severe septic infection. In cases due to streptococcus the pulse rate is high and out of proportion to the temperature curve. The constitutional symptoms are also more marked than would be expected from the height of the temperature. In staphylococcus and colon infection the temperature may be high, but the pulse is lower than in streptococcus infection. Marked beneficial results were obtained in several cases of pure streptococcus infection by the author from the use of antistreptococcus serum.

**The Curette in Obstetric Practice.**—This paper was read by Dr. H. D. Fry of Washington, D. C. As a general rule the curette should be employed only in those cases in which we cannot use the fingers. In infection by streptococci a protective zone is formed beyond the limit of the exudate and the general system is usually protected. If this be broken down by the curette a general infection results. If the infection be due to saprophytic organisms, a foul-smelling discharge occurs and here the use of the curette is indicated. The streptococcus infection is seldom accompanied by a foul-smelling discharge and this is a rough means of differentiating between them. If one is in doubt cultures can easily be taken and most cases can safely wait twelve hours for the result.

**Streptococcus Infection Following Labor.**—This report was read by Dr. W. Humiston of Cleveland, O. The case was drained by the method of opening into the pouch of Douglas and inserting gauze therein. The streptococcus, staphylococcus and colon bacillus were found in the peritoneal exudate. A satisfactory result was obtained and there are practically no adhesions remaining.

**Sterility of American Women.**—This was the title of a paper presented by Dr. George

J. Engelman of Boston and is based on statistics obtained from town records and family histories in various parts of the country. An analysis shows that a century ago the sterility of the American woman was but 2 per cent., the lowest in any civilized country on the globe, while the fecundity, *i.e.*, the number of children to a marriage, was 6. At present the sterility is 20 per cent. and the fecundity but 2 to a marriage. These figures show a much higher percentage of sterility among the wealthy classes. Among college graduates the sterility reaches 33⅓ per cent. and the fecundity but 1.4 to a marriage. The generally accepted sterility at present among civilized nations is 11 per cent. The sterility among foreigners in this country is 13 per cent. The French Canadian shows the highest fecundity of any race, amounting to 9 to a marriage. Miscarriage and divorce are concomitants and causes of sterility. Normally there is 1 miscarriage to every 5½ labors. In the United States there is 1 miscarriage to every 2½ labors, and in Boston 1 to 1 3-10 labors. In Canada there is 1 divorce to 6,300 marriages; in the United States 1 to 185, and in Rhode Island, 1 to 8 2/10. From 6 to 10 per cent. of all women miscarry normally; the remainder is criminal abortion. Primary barrenness due to utero-ovarian disease, such as gonorrhea or endometritis does not amount to more than 12 per cent. among Americans. That this increasing sterility is not due to increase in utero-ovarian disease is evident from its rapid increase hand in hand with the great progress of gynecology which we have every reason to believe would reduce the number of childless women to a minimum were sterility referable to tangible causes. Sterility is due to the male in 1 out of 5 barren marriages.

Dr. Duff of Pittsburgh said that much blame was due to the editors of the daily press in allowing the insertion in their papers of insinuating advertisements for the production of abortion.

**Ectopic Gestation.**—This paper was read by Dr. W. H. Wathen of Louisville, Ky. Nearly all forms of ectopic gestation are primarily cases of tubal pregnancy. None are primarily abdominal. There has been only one case of ovarian pregnancy reported before the one presented here. In the treatment the vaginal route is to be preferred (1) for almost all of the early cases, (2) after the sac has ruptured when the blood is confined between the layers of the broad ligament or in the cul-de-sac, (3) in slight extravasation in cases of intra-abdominal rupture. Suprapubic section is advisable in all other cases. When the placenta cannot be removed entirely, the cul-de-sac should be opened from below and the edges of the sac should be sutured in the vagina, thus making it extraperitoneal. Then it may be allowed to slough out.

## FOURTH DAY—JUNE 7TH.

**Puerperal Eclampsia.**—This paper was presented by Dr. T. J. Beattie of Kansas City. In all cases of eclampsia the urine contains micro-organisms, but none thus far described can be considered as specific. Albumin in the urine is a secondary manifestation and is due to the direct action of the poison on the renal epithelium in an effort at elimination. A certain amount of this poison is present in the blood of all pregnant women. The most significant evidence of impending eclampsia is the finding of less than 15-10 per cent. of urea in the urine. Veratrum viride is our most valuable drug in this affection. If we give it in a sufficiently large dose the pulse can be kept low and experience has shown that if the pulse remains low convulsions rarely occur. Ten minims by hypodermic injection should be administered and repeated when necessary.

Dr. C. L. Bonifield of Cincinnati, O., said that veratrum viride is an absolute specific in full-blooded individuals with a full, bounding pulse. From fifteen to sixty minims of Norwood's tincture should be given and repeated every fifteen minutes until the pulse falls below 60. It should be kept below 60 for three or four days. It should never be used in thin, anemic women with a small, thready pulse. Morphine and chloral are the best agents in these patients.

**Cæsarian Section for Placenta Previa.**—This was the title of a paper by Dr. W. J. Gillette of Toledo, O. As a result of a circular letter sent by the author to 1,000 maternity institutions inquiring into the frequency of placenta previa the following data were obtained: Out of 105,935 deliveries there were 216 of placenta previa or one in every 481 deliveries. Thirty-four mothers died, a mortality of 15 per cent.; 96 children died, a mortality of 34½ per cent. In placenta previa centralis the maternal mortality was 22 per cent., with a fetal mortality of 70 per cent. In placenta previa partialis the maternal mortality was 11 per cent., and the fetal mortality 31 per cent. None of the mothers died before the seventh month. One-third of the cases reached full term. Dr. Bernays of St. Louis performed the first successful section for placenta previa in 1893. Nine cases of this operation have been reported since that time. A successful case by the author makes ten in all. Four of these have been successful as regards mother and child. Under proper conditions Cæsarian section for placenta previa should not furnish a fetal mortality greater than 10 per cent. and no maternal mortality. The Porro operation is best fitted for these cases because when the patient is first seen she is usually exsanguinated and in such the uterus does not contract well.

**Intra-Uterine Amputations.**—Dr. Maher of Oakland, Cal., reported the case of a child in

whom at birth the fingers of one hand and the toes of one foot were missing. A few days later a spontaneous amputation of the fingers occurred on the hand of the other side. This was shown to be due to fibrous bands that encircled all of the digits. The author believes that these bands were due to a deposit of fibrin from the amniotic fluid.

**Gynecology; Its Contributions to Surgery.**

—This was the title of a paper by Dr. Henry O. Marcy of Boston. Ovariectomy has advanced with more rapid strides in this country than elsewhere. Dr. Burnham of Lowell, Mass., was the first one who ever performed myomectomy for fibroid tumors of the uterus. The author himself performed the first cholecystotomy ever reported. Gynecology as a specialty is rapidly disappearing. The gynecologist is gradually becoming a specialist in abdominal surgery.

The following officers were elected for the ensuing year: Dr. J. G. Carstens of Detroit, Mich., Chairman; Dr. C. L. Bonifield of Cincinnati, O., Secretary.

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**BOOK REVIEWS.**

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**THE HISTORY OF MEDICINE IN THE UNITED STATES; A Collection of Facts and Documents Relating to the History of Medical Science in this Country, from the Earliest English Colonization to the Year 1800, with a Supplemental Chapter on the Discovery of Anæsthesia.** By FRANCIS RANDOLPH PACKARD, M.D. Illustrated. 8vo., pp. 542. J. B. Lippincott Co., Philadelphia and London, 1901.

DR. PACKARD has gathered innumerable incidents from private papers and early journalistic records to bring clearly before the mind of the reader the conditions under which the practice of medicine rose from a combination of rough horse-doctoring and quackery to a science deemed worthy of university standing. He treats in particular of the American colonies, the early medical education and schools, the place of medicine during the War of Independence, and the first attempts at organizing medical societies and medical literature.

Most fascinating is the manner in which Dr. Packard has combined the results of his investigations and the more or less unimportant facts of the early quackery among the colonists, with the familiar events of history. Anecdotes, quotations from diaries and extracts from old letters, and various early prescriptions, form a quaint and realistic setting for the actual statistics; while the detailed accounts of the fevers and epidemics prevalent during the seventeenth century, show with what care all the existing sources of information have been studied in order to clearly set forth the exact position of the New World in regard to the rise and knowledge of medicine.

Great attention is paid to the first efforts to-

ward a proper medical education in this country, showing the change from the simple apprenticeship of the student to some local doctor, to the final establishment of schools of medicine, and a particularly full description is given of the founding of the medical department of the University of Pennsylvania, and the establishment of the first hospitals. The lives and efforts of all the early physicians and surgeons are carefully outlined, with the particular movements with which they were connected.

In treating of the place of medicine and of hospitals in the War of Independence the author has been most successful in giving the atmosphere of the times and portraying the struggles and difficulties of those engaged in caring for the wounded. Even in these times there seem to have been political snags; and though many of the foremost doctors occupied military posts of great importance, they seem to have encountered difficulties in obtaining the needful supplies for their medical duties.

The last chapter of the book must be mentioned especially as differing from the rest of the volume. It gives a most interesting account of the discovery of anesthesia by Dr. Crawford Long in 1842; and the rival claims of Drs. Jackson and Wells; also the manner of first using ether to benumb the senses, and its first application to a private patient of Dr. Long's. The final description is of the first public use of ether at the Massachusetts General Hospital, by Dr. Morton, and the subsequent adoption of this anesthetic throughout the country.

The whole volume is a very skilful combination of the early historical facts of medicine, told in a most readable way, and a vast amount of statistics which cannot fail to be interesting to all concerned in the study of medicine. Many of the statistics are of the beginnings of what are now world-renowned institutions, and to have them so collected from their various almost unobtainable sources and arranged in compact form will be a great satisfaction and pleasure to any desiring to ascertain points of historical importance in the early development of medicine in the United States.

**A SYLLABUS OF NEW REMEDIES AND THERAPEUTIC MEASURES; With Chemistry, Physical Appearance and Therapeutic Application.** By J. W. WAINWRIGHT, M.D., Member of the American Medical Association, U. S. Pharmacopœial Convention of 1900, American Chemical Society, etc. Chicago: G. P. Engelhard and Company, 1901. Pp. 224.

THAT many of these new remedies are extensively used goes without saying, yet from the scattered or interested literature about them, one has difficulty in reaching conclusions as to their value. So the author's attempt to search this literature, and by abstracts of the material at hand to make a convenient and concise handbook will be appreciated by the practitioner. The author wisely refuses to consider the many pat-

ented mixtures that are sold as coal-tar products, but takes up those the chemistry of which is known, or the exact formulæ of which are given. Besides the ordinary list of remedies he has discussed under separate headings anesthesia, animal remedial preparations, the Nauheim treatment, cold and heat and serumtherapy. As is the custom among the best writers, the doses are given in the metric system, being followed, however, in each instance, by the equivalent amounts in Troy measurement. Almost no attention is paid to chemistry, and but little to solubilities and incompatibilities, the book being essentially a therapeutic summary. Like its fellows in the Standard Monograph Series, this book is handsomely printed and bound with uncut edges and gilt top. It will form a creditable addition to one's materia medica library.

### BOOKS RECEIVED.

*The MEDICAL NEWS acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the MEDICAL NEWS will shortly appear.*

**PATHOLOGIE GÉNÉRALE ET EXPÉRIMENTALE. LES PROCESSUS GÉNÉRAUX. I.** Par. MM. A. CHANTEMESSE and W. W. POWDYSSOTSKY. 8vo, 428 pages. Illustrated. C. Naud, Paris.

**MOSQUITOES. How They Live; How They Carry Disease; How They Are Classified; How They May Be Destroyed.** By L. O. Howard, Ph.D. Demi 8vo, 240 pages. Illustrated. McClure, Phillips & Co., New York.

**OPERATIVE SURGERY.** By Dr. Joseph D. Bryant. Vol. II. 8vo, 1,302 pages. Illustrated. D. Appleton and Company, New York.

**A SYSTEM OF PHYSIOLOGIC THERAPEUTICS.** Edited by Dr. S. Solis Cohen. Vol. II. **ELECTROTHERAPY.** By Dr. George W. Jacoby. 8vo, 323 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

**ORAL SURGERY. A Text-Book on General Medicine and Surgery as Applied to Dentistry.** By Dr. S. L. McCurdy. 12mo., 368 pages. Illustrated. Calumet Publishing Company, Pittsburg.

**CLINICAL PATHOLOGY OF THE BLOOD. A Treatise on the General Principles and Special Applications of Hematology.** By Dr. James Ewing. 8vo, 432 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York.

**A TREATISE ON ORTHOPÆDIC SURGERY.** By Dr. Royal Whitman. 8vo, 650 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York.

**A PRACTICAL TREATISE OF DISEASES OF THE SKIN.** By Drs. J. N. Hyde and F. H. Montgomery. Sixth Edition. 828 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York.

**TWENTY-FOURTH ANNUAL REPORT OF THE BOARD OF HEALTH OF THE STATE OF NEW JERSEY, 1901.**

**PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements.** Vol. II., June, 1901. Edited by Dr. H. A. Hare. 8vo, 470 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York.

**CLINICAL AND PATHOLOGICAL PAPERS FROM THE LAKE-SIDE HOSPITAL, Cleveland.** Series I., 1901. Collected Reprints.

**TRANSACTIONS OF THE ASSOCIATED PHYSICIANS OF LONG ISLAND.** Vol. II., January, 1900, to June, 1901. 8vo, 170 pages.

**BURDETT'S HOSPITALS AND CHARITIES, 1901.** The Scientific Press, London. Charles Scribner's Sons, New York.